

AUSTIN-TRAVIS COUNTY

Winter Storm Uri After-Action Report & Improvement Plan Technical Report

*Prepared on behalf of the City of Austin
in cooperation with Travis County*



October 27, 2021

TABLE OF CONTENTS

Table of Contents	2
Handling Instructions	3
Executive Summary	4
Introduction	5
Storm Impacts	7
Summary of Events	9
Event Timeline	12
Key Metrics	14
Methodology	15
Incident Analysis	16
Towards a More Resilient Community	53
Appendix A: Event Timeline	72
Appendix B: Survey Response Analysis	76
Appendix C: Focus Area Prioritization Schema	78
Appendix D: Improvement Plan	79
Appendix E: Reference Documents and Materials	108
Appendix F: Austin Community Group Participation List	109
Appendix G: Taskforce vs. AAR Recommendations	111
Appendix H: List of Acronyms	114

HANDLING INSTRUCTIONS

Document Title: City of Austin and Travis County Winter Storm Uri After-Action Report & Improvement Plan Technical Report.

Document Control: The City of Austin Winter Storm Uri After-Action Report (AAR) & Improvement Plan (IP) was developed to support the City of Austin and Travis County with identified lessons learned and opportunities for improvement and enhancement based on response operations during the North American winter and ice storm, unofficially referred to as Winter Storm Uri.

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In accordance with the Texas Department of Emergency Management (TDEM) criteria, this AAR and IP contains a minimum of three (3) of the four (4) following conditions:

1. The jurisdiction's community leadership and/or chief elected official, or a designated representative, identified in the jurisdiction's emergency management plan participated;
2. At a minimum, four (4) Core Capabilities were evaluated;
3. A declaration of the local disaster was issued; and
4. The emergency response involved resources from outside the jurisdiction.

This document was prepared to be consistent with guidelines established by the federal Homeland Security Exercise and Evaluation Program (HSEEP).

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EXECUTIVE SUMMARY

This AAR and IP documents the lessons learned from the City of Austin (“the City” or “City”) and Travis County (“the County” or “County”) winter weather activation during February and March 2021. This report summarizes the observations gathered from a response-focused After-Action Survey, documentation review, and engagement of 190 stakeholders active in the response operation. The after-action review includes a comprehensive information gathering process to illuminate City and County courses of action related to notifying, activating, responding to, and recovering from Winter Storm Uri. In the spirit of continual improvement and capacity building, this AAR will support the City and County in preparation for future winter weather operations and serve as the basis for improving community resilience.

This AAR is organized into four sections:

The [Introduction](#) details the Summary of Events that occurred after activating the Austin-Travis County Emergency Operations Center (EOC) on February 12, 2021; this section also includes an Event Timeline and Key Metrics detailing quantitative event-specific data and the Methodology used to develop this AAR and IP.

The [Incident Analysis](#) section analyzes six areas of evaluation that were critical to the winter weather response operation. Each area includes an overview of events and strengths, observations, and areas for improvement related to the respective area of analysis.

The following six areas are analyzed in this report:

1. Leadership and Coordination,
2. Food,
3. Water,
4. Shelter,
5. Health and Medical, and
6. Transportation.

Also included are individual Incident Analysis Timelines that coincide with the more extensive Appendix A: Event Timeline located in [Appendix A](#).

The [Towards a More Resilient Community](#) section presents the Improvement Plan in the context of the City of Austin Strategic Direction 2023 and the Strategic Vision and Goals of Travis County. The purpose is to align the recommendations identified from this after-action reporting process with the existing goals of the City and County to promote community resilience. This section divides the recommendations into five key areas: Economic Opportunity and Affordability, Mobility, Safety, Health and Environment, and Government that Works for All.

The [Improvement Plan](#) in [Appendix D](#) consolidates the recommendations of the City of Austin and Travis County’s capabilities and response for use during future events. The IP creates a clear plan for implementation by establishing responsible parties, estimating the timeframe for completion, and assigning priority through a set of defined criteria. This plan identifies actions that the City and County and stakeholders will take to increase emergency preparedness and improve response capabilities in the future. This plan identifies 132 recommendations structured to enhance future response operations. The City and County will require additional resources to implement many of these actions.

INTRODUCTION

Overlapping Emergencies

In February 2021, City and County staff had spent nearly a year supporting COVID-19 response operations. The demands on staff and other resources had already vastly exceeded normal, pre-pandemic operations: Staff had logged thousands of hours across multiple departments. In this context, the February 10-18 North American series of winter and ice storms, unofficially referred to as Winter Storm Uri, arrived across Austin, Travis County, the State of Texas (“the State” or “State”), the United States, Mexico, and Canada. Winter Storm Uri was an overlapping emergency with overwhelming and cascading community impacts¹ on the loss of power, water, transportation, communications, and livelihoods.

Debating Results

The storm resulted in deliberation on the completeness of the response and level of preparedness. Residents, neighbors helping neighbors, community, and private sector groups worked relentlessly to provide food, water, access to shelter, and build response capabilities.² City and County emergency personnel tirelessly labored to increase access to food and water, shelter, and other life-sustaining services. They were lauded by many for their efforts, particularly given the collapse in systems, infrastructure, and the ongoing demands of the COVID-19 response operation.

At the same time, many residents and some elected officials identified shortcomings. These included a lack of equity in City and County services, shortfalls in coordination, inadequate preparation, insufficient planning, and ineffective utilization of robust community-led efforts. Many of these gaps were noted in the July 2021 Austin Winter Storm Review Task Force Report (Appendix E). In particular, the report highlighted shortcomings in addressing community needs and diminished trust in City leadership.

Establishing Perspective

This AAR and IP should be read and was developed in consideration of these perspectives. This AAR documents significant tactical and other shortfalls in response, planning, and preparedness to manage an event of this magnitude and complexity. In particular, the storm exposed the fragility of support for vulnerable community members in an extreme and high-magnitude weather disaster. However, the report also includes areas of significant strength, decisive action, and personal courage on the part of residents, community non-profit and private sector groups, City and County departments, and elected leadership.

¹ In this context, a cascading impact is an inevitable or unforeseen chain of event(s) due to an act affecting a system or population.

² Please find a list of community and non-profit groups active in the response in [Appendix F](#).

Meeting the Future

According to key stakeholders interviewed for this report, Winter Storm Uri was both unprecedented and a precursor of future events. The City and County will likely be required to respond to storms of greater intensity combined with equally challenging emergencies. This was evident not just in the concurrent COVID-19 and Winter Storm Uri response. It was also the case in the overlapping 2020 response to COVID-19 and Hurricane Laura. Planning and preparedness levels have been based on and developed for the lower complexity of historical events. In response, the City and County, according to stakeholders interviewed, should endorse and implement significant and holistic enhancements to preparedness and planning, including catastrophic planning.

Among these are new funded approaches to staffing emergencies; including equity across planning, preparedness, response, and recovery; and improving mass care, feeding, and sheltering. Equipment and infrastructure require upgrading. Setting realistic expectations for the public of services, better-utilizing community organizations, and emphasizing greater personal preparedness are continued needs.

Additionally, a more significant agreement with associated human resource considerations should be established to better utilize staff from City and County departments in emergency and disaster response operations. The concurrent emergencies compounded a staff shortage, exacerbated by reduced non-governmental volunteer agency support service staffing because of COVID-19.

Seizing Opportunity

As with many aftermaths, there is a choice in how the City of Austin and Travis County meet their future. It is a future likely to include concurrent and overlapping emergencies that outstrip current response capacities and models of prediction. The ability to note, hear, and recognize gaps without judgment and act on improvements will benefit the community and local governments. A whole community approach will be required. A failure to recognize the opportunity and seize it for continuous improvement may relegate the City and County to an otherwise avoidable repetition.

A Note on Community Groups, Non-Profits, and Businesses:

A listing of groups and businesses participating in the response and recovery is found in [Appendix F](#). The report should be read in association with this appendix as a means of fully recognizing the contributions of all who participated.

STORM IMPACTS

Nationwide, Winter Storm Uri resulted in over 170 million Americans being placed under winter weather alerts issued by the National Weather Service and caused over 5 million people in the United States to experience blackouts. The storm led to the largest blackout since the Northeast Blackout in 2003 and was the deadliest winter storm since the Storm of the Century in 1993. In the State of Texas, Winter Storm Uri created in excess of \$195 billion in damage, making it the costliest natural disaster in Texas history.

Overwhelming effects

In the City of Austin and Travis County, the storm caused undue suffering, the collapse of critical systems, and the loss of life. Hundreds of vehicle crashes were reported by residents attempting to travel during the storm. Peak power outages corresponded with the lowest temperatures, leaving residents in dangerously cold homes; some chose to sleep in their cars as temperatures inside residences dropped to 40°F. Others huddled under blankets, taped windows and doors closed to retain heat, and those with fireplaces burned wood and furniture. Some burned fuel and charcoal in their homes, leading to toxic levels of carbon monoxide.



Figure 1: Winter Storm Uri left thousands of residents without power and running water.

The storm impacted nearly every corner of the community. Many emergency service personnel and first responders could not easily access workplaces because of icy road conditions, relying on a small number of colleagues with all-wheel drive vehicles to ferry them to offices. Other workers were stranded at home, with no power or internet. They improvised by charging mobile devices in their cars, where they set up makeshift workstations.

The City received 6.4 inches of snow, nearly an inch of ice from freezing rain, and consecutive days of below-freezing temperatures. Ambulances bogged down in the snow. Fire trucks slipped sideways on ice-slick surfaces and were unable to navigate conditions. The power flickered off at fire and police stations as well as shelter locations. The absence of power at shelters caused a hasty scramble to relocate residents. State-wide supply chains buckled and, at times, stopped functioning, further complicating the procurement of food and potable water. More than 100 water mains broke, and more than 200 apartment complexes lost water due to private plumbing damage.

Vulnerable Populations

Individuals most vulnerable to the collapse in infrastructure, access to services, and loss of income experienced disproportionate impacts. There were reports of frostbite among the City's unhoused population who had been exposed to freezing temperatures and unable to seek timely shelter. Lower-

income residents were cut off from workplaces and paychecks. Residents who struggled to gain access to food before the storm experienced greater insecurity. In homes with limited means to afford costly repairs, burst pipes caused ceilings to collapse and gushing water to turn stairways into waterfalls.

Many residents took to social media to illustrate perceived inequities. One image posted on Twitter is of downtown Austin lit while East Austin is in darkness; East Austin is the City's historically Black and Hispanic residential neighborhood. Downtown is home to Austin's central business district. Officials explained that essential services relied on maintaining electricity to downtown and the Capitol Complex. Officials urged conservation from other downtown facilities. They also noted that multiple neighborhoods, including historically affluent communities, experienced power outages, not just East Austin. But for many residents, this explanation did little to counter opinions that residents of limited means endured the brunt of the storm's impacts.

Terri Gruca ✓ @TerriG_KVUE · Feb 15

A tale of two cities - on the right is downtown Austin - to the left East Austin. Look who has power. @KVUE



Figure 2: Officials noted that power outages were widespread and affected multiple neighborhoods, not just East Austin. Nonetheless, the image reflected some community perceptions of inequities in response.

SUMMARY OF EVENTS

Warning and Notification

As the storm approached on February 10, 2021, the EOC and City and County departments had operated for 11 months on the COVID-19 response. Partners had ramped up mass vaccination sites; the Alternate Care Site (ACS) for COVID-19 at the Austin Convention Center (ACC) had supported 215 patients. COVID-19 Protective Lodges, Isolation Facilities, and testing sites operated across City and County agencies.

Winter Storm Uri arrived as a second emergency taxing already strained resources, and its impacts quickly escalated. Government departments issued public warnings. Austin Water on February 10 utilized social media to note increased risk of damaged pipes and share preventive measures. On February 11, Austin Energy published a news release offering cold weather tips and advising customers of the upcoming weather and possible power outages. The next day, a Friday, the National Weather Service issued a Winter Storm Watch for the entire region to anticipate the potential snow, sleet, and freezing rain. On Saturday, February 13, 2021, a Winter Storm Warning was issued for the City and County as sleet and freezing rain formed ahead of the approaching cold front.

Activation

Response operations supporting winter weather were activated within the EOC on February 12, 2021. The same day, the State of Texas issued a Disaster Declaration and the City and County activated Cold Weather Sheltering Plans for cold-weather overnight shelters and warming centers. Simultaneously, the Austin Parks and Recreation Department (PARD) moved to open warming centers for homeless residents. The City of Austin prepared the Palmer Events Center to accommodate up to 100 overnight residents in short-term accommodation. Numerous community organizations mobilized to support life-sustaining services for vulnerable residents.³

Light precipitation and freezing temperatures resulted in power outages caused by tree branches and other vegetation affecting power lines for 10,000 residents in Austin's Northwest Hills. With the storm developing, the National Weather Service issued a Winter Storm Watch for the Central Texas region and advised customers in Central Texas by Tweet that "...power outages could be possible." Following the report, the City of Austin announced that warming centers would transition from short-term, overnight accommodation to 24-hour shelter operations in a shift in mission and scope.



Figure 3: Thousands of residents sought shelter during Winter Storm Uri.

³ Please see [Annex F](#) for a list of community groups, businesses, and non-profits.

Response

On February 14, 2021, the City and County declared a State of Emergency and increased overnight sheltering capacity as temperatures plummeted to 10°F and several inches of snow began to fall. During the initial 48 hours of response, the need for shelter space outpaced adherence to COVID-19 social distancing requirements. On February 15, 2021, the number of residents without electricity grew to over 200,000. There were widespread outages in Austin as well as Travis County.

The plummeting temperature resulted in impassible roadways and a breakdown of State-wide supply chains. Freezing temperatures increased the demand for electricity. Meanwhile, many power plants across the state experienced problems or fuel shortages and went offline. The Electric Reliability Council of Texas (ERCOT), the electric grid operator for a large portion of Texas, was unable to meet electric demands and initiated its highest level of Energy Emergency Alert. ERCOT required utilities to shut off power to many customers to prevent a complete collapse of its power grid. This ERCOT-mandated action continued for four days. Figure 4 below illustrates outages that resulted from the ERCOT action.

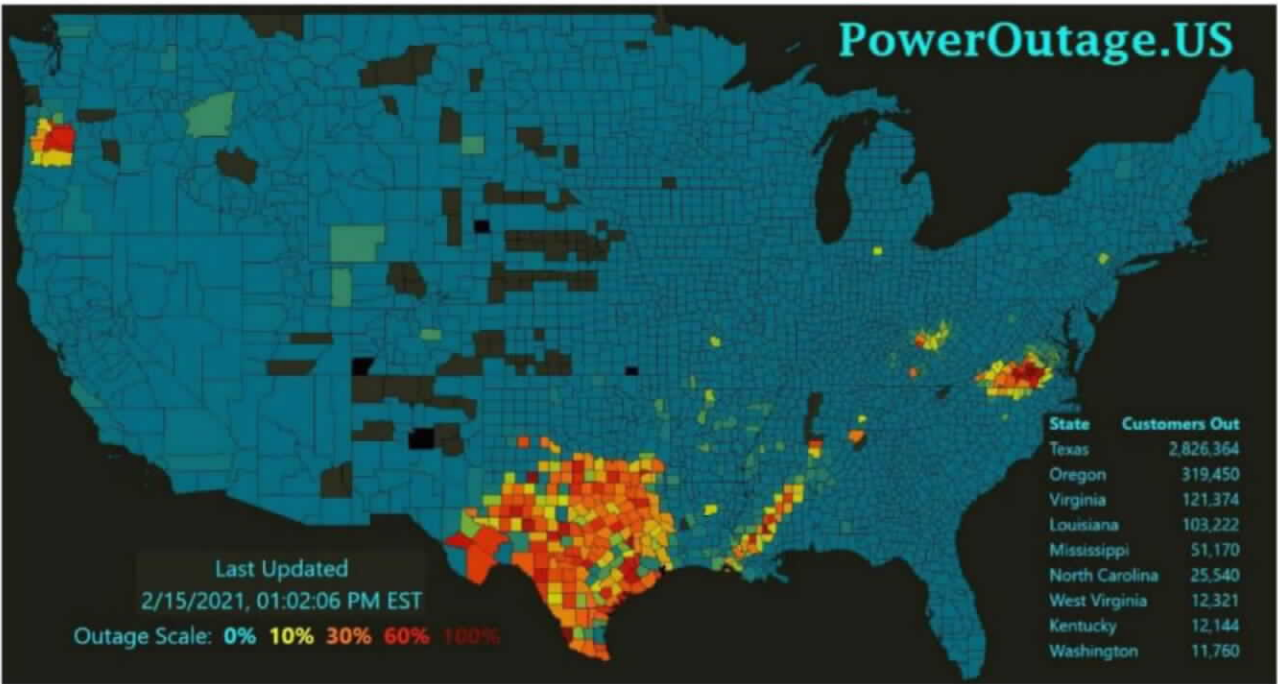


Figure 4: Outages on the National Electric Grid, showing outages in Texas counties.

On February 16, 2021, widespread fuel shortages were reported, and traffic signals were dark across the City and County. Many grocery store shelves were empty. Hospitals, already struggling against power and water loss, began running critically low on medical supplies. With the cold arctic air mass still in place and temperatures below freezing, another upper-level disturbance approached from the west. Ahead of it, warm air aloft led to freezing rain across the Hill Country and I-35 corridor on the evening of February 16, 2021, and into the morning of February 17, 2021.

Widespread areas recorded up to 0.25 inches of additional ice accumulation, with higher amounts of up to 0.6 inches of ice on already iced or snow-covered surfaces. The upper disturbance sent a reinforcing

cold front into the area on the evening of February 17. From the west, mixed precipitation in the form of freezing rain, sleet, graupel, and snow spread east and transitioned to all snow by the following Thursday morning. The blast of arctic air broke daily records for climate sites in the region. All climate sites saw five to six consecutive days of temperature records as well as multiple days of record-breaking snowfall.

Winter Storm Uri resulted in thousands of residents losing access to running water in the County and City. In the evening of February 16, 2021, the City's drinking water system began experiencing operational impacts during a record low temperature of 6°F. On February 17, 2021, Austin Water issued a boil water notice to its customers in southwest Austin and later Citywide to all customers. In Travis County, residents also suffered loss of access to drinking water. Subsequently, on February 18, 2021, the City purchased one million gallons of drinking water and began distributing water, and later food, at locations throughout the City and County. Throughout this period, community organizations and elected officials supported services for unmet life-sustaining needs.

On February 19, 2021, the City and County received a Federal Disaster Declaration from the President of the United States. By this point in the event, 96% of residents had their power restored. On February 21, 2021, the State of Emergency was lifted in the City and County.

Transition to Recovery

On February 22, 2021, the City and County experienced a high temperature of 76°F. The boil water notice was rescinded in stages for residents, then completely lifted the following day. In the two weeks following the storm, the City and County continued operating food and water distribution sites and demobilizing warming centers and overnight shelters. The Palmer Events Center closed to residents on February 26, 2021; It was the final shelter to demobilize. City and County operations shifted towards infrastructure and damage repair, as did community organizations. The Austin City Council, Austin Water, and Austin Energy put forward assistance for bill payments and, in the case of Austin Water, grants for private plumbing repairs and temporary rate reductions to help offset bill spikes from water leaks. The EOC initiated demobilization on March 12, ending the official response to Winter Storm Uri. The EOC continued to be activated for the COVID-19 pandemic response.

Winter Storm Uri Timeline



FEBRUARY 11, 2021

 30°

- Winter Storm Uri begins and temperatures plummet to 32°F.
- 10,000 residents are without power.
- Widespread road closures throughout the City of Austin and Travis County.
- Homeland Security and Emergency Management (HSEM) activates the Cold Weather Sheltering Plan and opens three overnight shelter locations at recreation centers across the City.

FEBRUARY 14, 2021

 14°

- The City of Austin and Travis County declare a State of Emergency.
- Austin Independent School District (AISD) begins operating sheltering and warming centers.
- The Palmer Events Center reaches capacity under COVID-19 public health guidance.

FEBRUARY 16, 2021

 6°

- Record low temperatures of 6°F are recorded in the City of Austin.
- The Palmer Events Center reaches extended capacity of 500 residents and stops accepting new residents.
- 39% of Austin Energy customers are without power.
- The City of Austin's drinking water system begins experiencing operational impacts.

FEBRUARY 18, 2021

 27°

- Churches open as overnight shelters.
- Three Austin Police Department (APD) stations are without water.
- One million gallons of water purchased from out of state.

FEBRUARY 12, 2021

 30°

- The State of Texas issues Disaster Declaration.
- The Austin-Travis County Emergency Operations Center (EOC) is activated.
- The Palmer Events Center prepares to open February 13, 2021, at 10 a.m. as a warming center.
- Operational impacts of the storm on the wastewater system begin.

FEBRUARY 15, 2021

 9°  6 in

- Low temperatures of 10°F recorded.
- Capital Metropolitan Transportation Authority (CapMetro) suspends service.
- Electric Reliability Council of Texas (ERCOT) calls for load shedding and reduction in power usage, repeating these calls through February 18, 2021.
- It narrowly averts a weeks-long, state-wide blackout.
- Number of residents without power grows from 100,000 to 200,000.
- EMS receives 4 times average call volume.

FEBRUARY 17, 2021

 27°

- A Boil Water Notice is issued for Austin Water's customers in southwest Austin and later to all customers.
- The EOC works with Texas Department of Emergency Management (TDEM) to supply 20,000 gallons of diesel fuel to avert system failure at the NXP Semi-Conductor facility.
- Two hospitals lose their boiler heater system.

CITY OF AUSTIN, AFTER-ACTION REPORT

Winter Storm Uri Timeline

FEBRUARY 19, 2021

 21°

- The President of the United States issues a Federal Disaster Declaration.
- 96% of Austin Energy customers have power restored.
- The Regional Medical Coordination group is critically low on platelet sources and attempts to move dialysis patients to clinics.
- Austin-Travis County Emergency Medical Services (EMS) begins experiencing radio communication issues.
- MRE distribution to shelters begins.
- 23,334 cases of water arrive from the Federal Emergency Management Agency (FEMA) and Texas Division of Emergency Management (TDEM).

FEBRUARY 21, 2021

 45°

- The State of Emergency is lifted in the City of Austin.
- The EOC receives the first shipment of water and opens 11 additional point of distribution (POD) sites across the County.
- Metro Access delivers 280 cases of water to apartment complexes and makes 61 home deliveries.

FEBRUARY 23, 2021

 48°

- The Boil Water Notice is lifted for the City of Austin and Travis County.

MARCH 12, 2021

 70°

- Demobilization of the EOC for the Winter Storm Uri response begins; however, the EOC remains activated for the COVID-19 response.

FEBRUARY 20, 2021

 27°

- Low temperatures of 20°F are reported in the City of Austin.
- 10 EMS stations are without water.
- 17 AFD stations are without water, power, or both.
- AISD closes their warming locations due to decreased need.
- Austin Water implements mandatory water-use restrictions.

FEBRUARY 22, 2021

 46°

- High temperatures of 76°F are reported in the City of Austin.
- The Boil Water Notice is rescinded for specific pressure zones.
- The Palmer Events Center has 100 residents and begins demobilization.

FEBRUARY 26, 2021

 46°

- The Palmer Events Center has no overnight guests and demobilization continues.
- City and County operations shift towards infrastructure damage repair and recovery.

KEY METRICS



6° F

record low temperature



50,000 meals

distributed by community partners



120,000 MREs

distributed by Austin-Travis County



7 days

under a Boil Water Notice



164 hours

of freezing temperatures

254

counties in Texas were under
a disaster declaration



40%

of Austin Energy
customers lost power



6.4" Snow

breaking record for
consecutive days of
snow on the ground
in Austin



\$195 billion

in damages



2,449

calls to AFD reporting
broken pipes



739

traffic accidents
responded to by AFD

Winter Storm Uri Methodology

STEP 1: DATA COLLECTION AND REVIEW

- Documentation from the Winter Storm Uri response was collected, reviewed, and analyzed.
- The Project Leadership Team collected and analyzed **100+ documents** pertaining to Winter Storm Uri and the City and County response operations.
- The data from this review provided necessary background and contextual information used when conducting stakeholder interviews.

STEP 3: AFTER-ACTION SURVEY

- The Project Leadership Team designed and disseminated an after-action survey to all stakeholders involved in the response to Winter Storm Uri. The survey received **191 responses**.
- The after-action survey was designed to capture additional details about the Winter Storm Uri response.

STEP 5: AAR REVIEW AND FINALIZATION

- Following the Project Leadership Team and Project Committee review of the AAR/IP, the AAR/IP was finalized.

STEP 2: AFTER-ACTION REVIEWS

- A series of after-action interviews were facilitated with a comprehensive group of stakeholders involved with the response to Winter Storm Uri.
- The Project Leadership Team conducted **72 meetings with 190 individuals**. Responses are organized into the following areas of analysis:

Areas of Analysis

- Food,
- Water,
- Shelter,
- Medical,
- Transportation, and
- Leadership and Coordination.

STEP 4: DATA ANALYSIS AND AAR DRAFTING

- The information gathered during the interviews and surveys was analyzed to develop initial draft observations of the AAR/IP.
- This draft was presented to the Project Leadership Team, Project Committee, and the Planning Committee for review at the AAR Conference.

INCIDENT ANALYSIS

This section presents an assessment of the incident response through the lens of six key service areas. These areas include leadership and coordination, food, water, shelter, health and medical, and transportation. This section summarizes the impacts associated with Winter Storm Uri in the City and County and analyzes best practices, strengths, and areas for improvement for the whole community.

Each area for improvement includes at least one recommendation intended to help the City and County prepare for, respond to, and recover from future events. In addition, each service area is further broken down by capability. These eight capabilities include planning and preparedness, logistics and supply chain management, operations and response, equipment and infrastructure, personal preparation, communication and coordination, staffing, and training and exercises.

LEADERSHIP AND COORDINATION

Overview

The community faced significant challenges in responding to the unprecedented and cascading impacts caused by Winter Storm Uri. The EOC activated on February 12, 2021. During the initial 120 hours of the response, the City and County faced difficulties in fully activating the response operation because of several constraints. These included access to staff, breakdown in supply chains, loss of power, water, and heat, impassable roadways, and sustaining operations amid response activities for COVID-19. Travis County had specific challenges in providing gas, water, and electricity to residents. The storm response also revealed significant areas for improvement in planning and recovery. Winter storms of sustained duration were not sufficiently accounted for in planning assumptions. The transition from response to recovery at times lacked coordination, and gaps in unmet needs were unaddressed.



FEB 11

HSEM activates the Cold Weather Sheltering Plan.



FEB 19

A Federal Disaster Declaration is issued for Winter Storm Uri.



FEB 21

HSEM begins the operation of water PODs.

Strengths

Strength: Teams with strong integration, well-defined command structures, and who had worked together previously were able to innovate solutions to system failures and cascading impacts, for example, the Capital Metropolitan Transportation Authority (CapMetro) and Medical Operations Command (MOC).

Strength: Non-governmental Organizations (NGOs), neighbors-helping-neighbors, and community groups organized to respond to food, water, and other unmet needs. This self-organization increased overall access to appropriate and nutritious food, water, and other services.

Strength: The ongoing mobilization for the COVID-19 response aided the City and County in activating and pivoting to the Winter Storm Uri response operation. Similarly, the response implemented lessons learned from previous gaps in operations, such as Hurricane Laura in 2020.

Strength: City and County departments that support emergency management chronically face staffing gaps. Despite these limitations, those who serve in those roles dedicated countless hours to the response, often with little access to sufficient rest or resources, to serve and address community needs.

Strength: The City and County's public information team and other departments maintained continuity by utilizing existing virtual platforms to work remotely when roadways were unsafe or impassible.

Strength: The Travis County Department of Transportation and Natural Resources, Public Information Office, and Office of County Judge and other county departments overcame storm challenges and provided services and information to those in remote areas of the County.

Areas for Improvement

Planning and Preparedness

Observation: The City and County had prepared for rotating power outages, but did not consider the widespread loss of power in their planning scenarios or the cascading impacts of sustained outages. The worst-case scenario that Austin Energy and the Electric Reliability Council of Texas (ERCOT) prepared for was rotating outages for several days, not sustained, and widespread outages.

- **Recommendation:** Revise risk considerations to create more resilient systems that can be sustained during cascading impacts, such as an ongoing pandemic and storm with state-wide effects. Revise planning assumptions to always account for multiple-hazard events with cascading impacts and infrastructure failure. Establish a clear and transparent expectation of service delivery during such scenarios.

Observation: The City and County had gaps in systems and means of verification for prioritizing and addressing community unmet needs in preparation, response, and recovery. These included lack of or shortfalls in data analytics and a single point of contact accountable for addressing community needs.

- **Recommendation:** Evaluate and revise as required all relevant planning documents to include actionable provisions that create accountable and verifiable means to address community unmet needs in all emergency management phases.
- **Recommendation:** Evaluate, develop, and implement a policy that requires the provision of the equitable availability and distribution of goods and services in a disaster with system-wide impacts. This policy should align with the definition of "equity," or its equivalent policy or definition, as adopted by the City and County.

Observation: The City and County do not have winter storms in their climate change and extreme weather events projections. Emergency management departments are adept at responding to single events; they are not sufficiently equipped to staff multiple events with cascading impacts.

- **Recommendation:** Include considerations for extreme winter storms and freezing in climate change hazard and threat assessments in planning and preparedness. Evaluate and revise relevant plans to anticipate a complex, multi-hazard event.

Observation: There were several gaps across the City and County departments regarding operational planning. Several City departments do not have or have not updated Emergency Operations Plans (EOPs) or Continuity of Operation Plans (COOP). Some planning documents that were up to date were not sufficiently understood or disseminated among key staff.

- **Recommendation:** Continue to review departmental planning so that agencies adhere to deadlines for updating COOP and other emergency planning documents.
- **Recommendation:** Address gaps in staff comprehension of planning documents by developing accessible training material and writing plans for a general audience rather than emergency managers.
- **Recommendation:** Develop a training or conduct an annual exercise for all City and County departments, community partners, and elected officials on relevant planning documents such as the EOP.
- **Recommendation:** Create a catalog of plans that are secure but accessible to necessary City and County staff.

According to After-Action Survey Respondents:

42% reported that their departments do not have a winter weather emergency operational plan or were not aware if a plan existed. 37% of respondents reported that their departments do not have a COOP plan or were not aware if one existed.

Observation: The Austin Equity Office has not previously had a formal role in disaster planning or operations and only recently has started participating in EOC operational roles. This resulted in less than coordinated access to disaster resources and information on vulnerable communities.

- **Recommendation:** Codify the role of the Austin Equity Office in EOC operations and EOPs. Review and revise emergency plans and the planning process with input or planning considerations from the Equity Office and community-based partners to inform planning and services for vulnerable populations.

Observation: Recovery operations lacked a coordinating structure and designated champion, such as a Chief Recovery Officer. The Unmet Needs Committee identified and consolidated outstanding community needs. However, follow-up actions were insufficient to comprehensively and cohesively assess and address needs.

- **Recommendation:** Evaluate a recovery structure that includes a designated full-time staffing lead with authority to convene and coordinate complex recovery needs related to disasters. Align structure with the Federal Emergency Management Agency's (FEMA) National Disaster Recovery Framework (NDRF) and Recovery Support Functions (RSF).
- **Recommendation:** Codify structure, ability to scale, alignment of tasks to varied recovery grants funding and roles and responsibilities in an updated pre-disaster recovery plan.

Logistics and Supply Chain Management

Observation: The lack of an organized and well-understood system for prioritizing resource requests and matching limited resources to needs contributed to an ad hoc approach to addressing community needs related to distributing food, potable water, and other resources.

- **Recommendation:** Utilize an equity lens in the distribution of water, food, and wrap-around services. Additional considerations for older adults, residents with access and functional needs, and residents without access to transportation should be taken into account when providing services.

Observation: The system in WebEOC for tracking, documenting, and prioritizing resource requests failed in the initial response period. This technical failure led to staff creating an ad hoc system in excel as a workaround. Resource requests in the initial 120-hour period were also sent to the EOC's Logistics Section from multiple sources and contributed to a "first-in, first-out" response that did not work sufficiently to prioritize requests and populations most in need.

- **Recommendation:** Identify a process for integrating and prioritizing resource requests within WebEOC or an alternative platform. For example, consider evaluating software tracking options for resource requests and test given proper use cases.

Observation: The City and County water Points of Distribution (PODs) team did not consistently communicate the changing location and hours of operation with the EOC. As a result, timely information about the location and operation of the sites to give to the public was sporadic, resulting in difficulty for residents to access water.

- **Recommendation:** Establish real-time communication utilizing the Geographic Information System (GIS) mapping system and ensure the location and operational information is consistently integrated into the command and PIO functions at the EOC.

Observation: HSEM and Travis County Office of Emergency Management (TCOEM) leadership noted gaps before the storm response in the number of adequate staff with a depth of logistics knowledge to maintain equipment and efficiently categorize resources. Gaps in trained and experienced staff were limiting factors in the storm response operation.

- **Recommendation:** Implement and fund current proposals for a more robust warehousing facility, capabilities, and capacity, including revised staffing, stocking, and training.

Observation: The storm response logistics team operating at the Travis County Exposition Center relied on one centralized facility for the distribution of resources. This centralized location does not easily reach the large geographical service area. The reliance on this singular location added stress to the supply chain.

- **Recommendation:** Evaluate the cost-benefits of a more distributed system that would allow staging of resources at smaller hubs in strategic areas throughout the City and County. For example, pre-staging resources may reduce reliance on hazardous roads and bridges and reduce distribution time for goods and services.

Observation: Personnel arriving at the response warehouse dock to pick up materials did not have paperwork or a process to validate and continue tracking the status of the request.

- **Recommendation:** Evaluate and strengthen the electronic system (with a paper backup option) for disaster requisition, addressing receipt and review of the request, delivery information, a standardized description of products and services, approver info, procurement method, and bill of lading.

Observation: The State of Texas pre-positioned assets in Seguin and Dallas-Ft. Worth but could not promptly fulfill resource requests from the City, County, and many others in the State due to the challenging road conditions and competing requests for the same limited resources.

- **Recommendation:** Evaluate contingency planning with the State of Texas, including dedicated resources for the City or County that are accessible during an event with widespread system impacts.

Operations and Response

Observation: The EOC faced several hurdles in activating winter weather operations swiftly, including concurrent operations with COVID-19. The resulting pace of operational mobilization contributed to observations that the response was disorganized and lacked coordination.

- **Recommendation:** Revise winter weather planning and preparedness activities to incorporate activation decisions with timebound triggers, for example, linking EOC activation and mobilization

to a specific hour). Disseminate activation triggers across all relevant City and County departments and their leadership. Communicate activation status according to plans.

Observation: The Transportation Branch and Mass Care Branch were not fully activated until later in the response. In the case of the Mass Care Branch, this was because of a lack of available staff and shortfalls in coordination between key departments and select agencies. A department with direct oversight of transportation resources did not have a representative in person at the EOC for the first 96 hours of the EOC's activation, contributing to challenges with fulfilling transportation-related and other requests.

- **Recommendation:** Develop or disseminate a Standard Operating Procedure (SOP) for activating the necessary branches, including criteria to determine when a branch should be activated. Address mass care branch staffing as part of the evaluation of personnel needs.

Observation: Some departments and field sites operated without a shared understanding of mission goals or situational awareness. For example, senior individuals in command positions noted that during the initial 120-hour response period, command elements in the EOC did not fully understand the conditions at Palmer Events Center and the need for additional staff and resources. These gaps in operational awareness contributed to the delay of services to those in need.

- **Recommendation:** Distribute daily Incident Action Plans (IAPs) and Situation Reports (SitReps) to departments and partner organizations, including elected officials. Acknowledge and address additional shortcomings in situational awareness and implement command decisions and coordination across departments that address these shortcomings.

Observation: HSEM, Austin Independent School District (AISD), Del Valle Independent School District, PARD, and local houses of worship operated shelters or warming centers. At many times, the sheltering operation lacked a clear command structure, shared situational awareness and gaps in data analytics and consistent coordination.

- **Recommendation:** Evaluate response operations' coordination and communication and implement transparent operating procedures for roles and responsibilities based on this analysis. Address gaps noted in this observation as part of the recommendation to revise mass care planning and sheltering.

Observation: The Millennium Youth Entertainment Complex provided much-needed services to the community and was lauded as a model in service provision. The site was operated by an elected official and multiple non-profit groups instead of a single entity, resulting in challenges in transitioning site management between non-profit groups and retaining volunteers.

- **Recommendation:** Enhance coordination between the City and NGOs, including relief site management transition and volunteer management.

Observation: Policies, procedures, and systems between the City and County sometimes conflict and impede operations and efficiency despite an otherwise strong and coordinated working relationship. For example, Travis County Health and Human Services (HHS) provided case management and mass care

services, filling a gap due to staffing shortfalls of departments with similar mandates. But the department faced obstacles in City policies that hampered its operations.

- **Recommendation:** Conduct an analysis of City and County policies that may hinder operations across jurisdictional boundaries and implement a unified approach that removes obstacles to collaboration and mutual support.

Observation: There was a lack of resources for response staff during this disaster. This included a range of goods and support services, from cots and access to sleeping accommodations, water and food, mental health, and well-being support.

- **Recommendation:** Evaluate and identify the range of City and County emergency and disaster response support services from equivalent jurisdictions and the viewpoints of subject matter experts. Develop the support goods and services list from this analysis and identify sustainable funding or partner resources for their implementation. The purpose of this action is to bring Austin and Travis County services in line with equivalent jurisdictions.

Observation: City and County departments did not have an adequate process or structure for the designation and inclusion of a team of safety officers. As a result, staff and volunteers operated without sufficient oversight in potentially hazardous conditions. For example, safety officers worked in below-freezing temperatures conducting traffic management of large vehicles and operating heavy equipment.

- **Recommendation:** Establish an improved Incident Command Structure (ICS) that requires safety officers from across the City and County. Formalize their inclusion and engagement in an SOP. In addition, conduct a safety audit with a defined scope and actionable recommendations, for example, traffic management, operation of heavy machinery and vehicles). Incorporate this revision in an SOP with strong adoption by senior leadership and response personnel.

Equipment and Infrastructure

Observation: The City and County lack a comprehensive approach to data analytics and visualization. For example, they were limited in assessing the community's food and water needs, map infrastructure failure, shelter operations, or water disruptions due to the lack of GIS mapping technology utilization and systems for managing data.

- **Recommendation:** Invest in and operationalize a comprehensive approach to data analytics and visualization across all response areas. This should include GIS mapping technology and an analyst that is available to track metrics such as infrastructure operation and areas of need across multiple responses. Develop a technology team to identify the process, manage, and communicate the system for GIS mapping and other data-related management during disasters.

Observation: Remote work capabilities, such as Microsoft Teams, served as a backup for those individuals who could not access the EOC. In some instances, in-person and remote operations were disjointed. There is a need to further refine and identify remote work solutions to implement redundant systems in response operations.

- **Recommendation:** Evaluate refinements in remote work technology, such as Microsoft Teams, that improve the efficiency of outputs and coordination during major disaster response operations. Identify, test, and exercise these tools under multiple scenarios for the purpose of continual improvement.

Observation: The lack of a consistent data management system related to receiving and processing resource and service requests contributed to the duplication of efforts by multiple departments. For example, a consistent system to organize and manage food and water requests was not established across departments during response operations.

- **Recommendation:** Identify gaps in data sharing between City and County departments to assist in responding, coordinating, and managing requests for resources and services requests. Utilize this data to avoid duplication of efforts while targeting and supporting the communities and residents most in need.

Observation: Numerous City departments lacked sufficient access to tire chains, broadband, food, water, and other resources necessary to provide services to the community and support the response operation. City staff were untrained and lacked experience utilizing equipment available or ready for use during a winter storm, such as inexperienced staff driving in ice and snow conditions.

- **Recommendation:** Identify and address gaps in equipment and resources for emergency response operations during winter weather events. Train personnel on the use of this equipment, accounting for lack of experience in utilizing equipment during winter weather.

Observation: Not all essential personnel had internet hotspot capability through their work-issued cell phones or had a reliable backup system for communication. This lack of communication created additional obstacles in the response operation.

- **Recommendation:** Assign essential personnel FirstNet-powered cell phones to communicate with during disaster response.

Observation: A City departmental phone system encountered issues due to a high volume of calls and power outages at another City department's facility. A lack of capacity in their internal dispatch system contributed to a delay in assistance and resumption of water service to impacted residents.

- **Recommendation:** Evaluate dispatch phone systems across the City to identify those in need of revision or upgrade to manage a large volume of requests during emergencies.
- **Recommendation:** Conduct a gap analysis to evaluate the ability of departments to access data specific to service disruptions or utility outages during a system-wide disaster.

Observation: Frontline emergency service department facilities, non-profits, and community groups experienced a loss of power, plumbing issues, and gas pump inoperability due to power outages during Winter Storm Uri. In some instances, generators failed or were inoperable at fire stations due to poor maintenance.

- **Recommendation:** Identify generator needs to support critical infrastructure (e.g., essential buildings, services, 3-1-1), resource maintenance of this capacity, and require departments to

certify operability of these backup systems. Identify non-profit and community partners who do not have backup power and encourage the installation of alternative power sources. Factor backup power capabilities of non-profits in planning.

Personal Preparation

Observation: Expectation gaps persisted between the community and the level of service that typical City, County, agencies, and other response partners are able to provide in a disaster with system-wide impacts such as Winter Storm Uri.

- **Recommendation:** Emphasize strategies for personal preparedness and resilience and further foster social connections with neighbors and neighborhoods to increase self-reliance. These strategies should provide clear expectations and be inclusive of a whole community approach. For example, residents should be provided guidance on the number of days adequate for maintaining a supply of food and water in the event of a disaster or emergency.
- **Recommendation:** Identify programs, resources, and approaches to improve or encourage whole community resilience and risk reduction prior to, during, and following disasters. These efforts should include all sectors of the community, including businesses and non-profits. For example, provide free emergency preparedness training at community centers, libraries, and other City and County-owned facilities in partnership with HSEM, TCOEM, and TDEM. Identify approaches if practical that encourage businesses to implement risk reduction measures.

Observation: City and County departments should continue to strengthen the personal preparedness of their staff. For example, staff at a frontline emergency service department lost utilities at home. As a result, staff were unable to report to work or had their work productivity impacted.

- **Recommendation:** Identify and implement evidence-based or best practice programs for personal preparedness in supporting City and County staff to fulfill job functions.
- **Recommendation:** Identify actions that incentivize staff members to ensure their families are prepared for disasters without them, including utilizing the FEMA Ready Responder Toolkit guidance and resources.

According to After-Action Survey Respondents:

33% felt personally unprepared for the storm's impact. 59% of respondents lacked generator/ reserve power for their home and 46% lacked backup power for their computer/internet.

Communication and Coordination

Observation: The 2018 Colorado River flood and boil water incident, a localized event, likely set the public's expectation of the City's disaster response capabilities. This past experience may have set unrealistic expectations for Winter Weather Uri, a state-wide incident with significant competition for resources and disruption to critical systems.

- **Recommendation:** Implement communication strategies to increase public awareness of City and County services during disasters. This should incorporate the first 72 hours and 120 hours in a complex disaster with supply chain impacts. Utilize the City of Austin's annual community survey as a means of verification and measurement.
- **Recommendation:** Require an equitable approach to communications planning, such as activities or tactics that provide accessible information on available services to vulnerable populations. In conjunction with this policy, define vulnerable populations.

Observation: The City and County had gaps in the utilization of software to monitor social media. These gaps included identifying and responding to unmet community needs.

- **Recommendation:** Identify actions to improve the monitoring of social media and other communication channels to identify and respond to unmet needs during a disaster.

Observation: There were several breakdowns in the communication between departments and the City Council. Some council members did not receive timely information on the storm response, such as situation reports. In addition, there was a lack of coordination in disseminating messages to the public.

- **Recommendation:** Implement a communications plan or policy that defines the roles of City Council, Mayor, and County elected officials in an emergency and disaster preparedness and response.

Observation: There were gaps in providing timely and appropriate language access in public communications. Some government websites are translated into languages other than English but are not easy for the public to locate. A lack of translated or modified materials for the Asian American community, Pacific Islander community, and people with disabilities was not widely disseminated. Communication gaps resulted in some non-English speaking residents not being able to access information and resources.

- **Recommendation:** Evaluate staffing for language translation services during a disaster or emergency. Alter current plans or contracts to provide language services as planned during a disaster with system-wide impacts.

Observation: Approximately 950,000 texts and emails were delivered via the Warn Central Texas system throughout the City and County operations. A lack of registrants contributed to insufficient public information and warning before and during the storm. However, it would not have resolved all issues due to pervasive power outages.

- **Recommendation:** Identify a baseline indicator and increase to this level the number of registrants for the Warn Central Texas Regional emergency notification system.

Staffing

Observation: HSEM and TCOEM are understaffed across all functional areas, and their current structure and staffing models are designed for a single event response, not multiple-response operations. These gaps are limiting factors in the ability of HSEM and TCOEM leadership to coordinate a complex response operation. They will continue to hamper operations until addressed.

- **Recommendation:** Commission an analysis to evaluate appropriate HSEM and TCOEM staffing levels to respond to increased frequency, intensity, and complexity of disasters. This analysis should take into consideration current and anticipated agency assignments and responsibilities.
- **Recommendation:** Evaluate staffing gaps and needs across all City and County departments to include considerations and assumptions for multiple events with cascading and system-wide impacts.

Observation: The demand for responding to concurrent emergencies, the COVID-19 pandemic, and winter storm response revealed additional staffing gaps in the City and County departments (e.g., public health, emergency management). The future likelihood of concurrent emergencies with system-wide impacts is realistic and should be accounted for in staffing plans.

- **Recommendation:** Continue to resource alternative staffing schemes, such as a reserve team or stand-by roster of qualified public health and emergency management professionals who are sufficiently trained for rapid and effective deployment.
- **Recommendation:** Require mandatory training of City and County staff in disaster response operations. Integrate this recommendation in the revised staffing policies outlined in the above recommendations.

Observation: Current City and County staffing policies limit overtime pay for staff and do not provide protections for personal safety or personal property used in the response. These policies resulted in a reduced number of staff that responded during Winter Storm Uri. County policies do not provide overtime pay nor hazard protections for full-time salaried employees.

- **Recommendation:** Evaluate City and County policies against other comparable jurisdictions and develop and propose policy revisions appropriate to better incentivize staff participation.

According to After-Action Survey Respondents:

48% reported challenges with having enough staff to respond effectively. A lack of adequate staffing throughout the event created significant challenges for service delivery and coordination at the EOC and in field operations.

Observation: In response to Winter Storm Uri, several volunteer organizations that typically provide disaster response staffing were unavailable due to requests from other jurisdictions, inclement weather affecting transportation, and the concurrent response to COVID-19.

- **Recommendation:** Develop a staffing plan that includes SOPs for notifying non-governmental and other organizations of the anticipated need for volunteers.

Observation: The winter storm and its cascading impacts on utility outages and hazardous road conditions created additional barriers to accessing workplaces, both virtually and in person. These obstacles exacerbated staffing gaps.

- **Recommendation:** Evaluate improvements in redundant systems for remote working in City and County COOP planning, such as an alternative location or backup power for employees designated as essential.

Training and Exercises

Observation: The EOC did not initially have processes and information to orient new EOC personnel. This lack of an on-boarding process for replacement or redeployed City staff contributed to challenges when transitioning new personnel into EOC sections.

- **Recommendation:** Develop an EOC orientation process to support the onboarding and transition of EOC representatives between shifts.

Observation: In their efforts to address community needs, some elected officials encountered difficulties in coordinating service delivery through the EOC. In response to these difficulties, they engaged in operations to address gaps in services, such as the distribution of water. They also communicated directly with HSEM leadership to address bottlenecks.

- **Recommendation:** Strengthen the EOC liaison officer's capability to support and coordinate with Austin City Council and County officials during emergencies.

According to After-Action Survey Respondents:

23.84% reported that their department or organization conducted training or exercises in the previous 12 months in preparation for a winter storm. Of the 23.84% of respondents that participated in a training or exercise, 90.24% reported that this training provided relevant preparation for their assigned position during Winter Storm Uri.

Observation: A lack of training for some City Council members in EOC processes contributed to challenges in coordinating the response to field operations. At the same time, some City Council members observed gaps in the preparation and capabilities of departments to provide solutions that addressed the needs of the community.

- **Recommendation:** Provide training for elected officials on EOC operations and explicitly define their roles in disaster response operations.

Observation: 3-1-1 was a critical tool Austin residents and support agencies used to connect needs and resources during the emergency response. 3-1-1 experienced an influx of call volume during the event but did not have adequate and timely information to relay the incoming requests to the appropriate City of Austin Departments for response. As a result, agencies faced challenges in coordination, delays in response, and a duplication of efforts.

- **Recommendation:** Evaluate the effectiveness of existing 3-1-1 scripting and adjust for both daily and emergency calls, especially as it relates to the requests that need to go to departments during emergencies. Develop training for Austin 3-1-1 staff on responding to common disaster requests.

Food

Overview

The storm exacerbated underlying food security challenges due to the breakdown in supply chains, shuttered grocery stores and restaurants due to loss of power, water, and access to transportation. Community-based organizations, the private sector, and non-profits filled significant gaps in food availability, providing more than 100,000 meals to residents in need. These efforts were supplemented by HSEM and TCOEM and the provision of emergency supplies, such as Meals-Ready-to-Eat (MREs) and prepared meals. However, the City and County were slow to stand up operations in the initial 120-hour response period, such as staffing for food operations. They lacked both planning and an adequate leadership structure to provide a comprehensive feeding operation. These and other gaps informed the recommendation to establish a comprehensive disaster feeding plan.



FEB 14

HSEM requests feeding support at the Palmer Event Center.



FEB 20-24

Local restaurants partner with non-profit and community groups to distribute 20,000 meals to the community.



MAR 12

A total of 120,000 shelf-stable meals have been distributed by the EOC.

Strengths

Strength: HSEM and TCOEM sourced 120,000 MREs and 50,000 prepared meals. MREs were procured primarily from FEMA, TDEM, and the American Red Cross (Red Cross). Prepared meals were sourced from NGOs and private companies.

Strength: The City and community-based partnership Eating Apart Together (EAT), initially created to provide food to persons experiencing homelessness during the COVID-19 response, provided shelf-stable food to the Palmer Events Center, PARD shelters, and other locations. This effort provided an essential sustaining food resource during the first 120 hours of the response and throughout the response.

Strength: Community-based organizations and private sector businesses responded to the disaster-specific food access needs in the community, specifically to those populations they served before Winter Storm Uri. This grassroots response increased overall access to appropriate and nutritious food. It was an example of community resilience that can be utilized during future response operations.

Strength: The Millennium Center and the Palmer Events Center were effective distribution sites due to the proximity to vulnerable populations. Both facilities also incorporated a drive-through that allowed residents or community partners additional flexibility and convenience to receive supplies.

Areas for Improvement

Planning and Preparedness

Observation: Cascading impacts from water outages, such as burst pipes and loss of power, created stressors, exacerbating the loss of access to income. As residents struggled to address and respond, their access to nutritious and appropriate food was made more difficult, resulting in increased food insecurity. These stressors were not sufficiently accounted for in planning or policy.

- **Recommendation:** Integrate innovative policy solutions as part of the approach to providing emergency services (e.g., direct cash transfers to increase access to food when supply lines are functioning).

Observation: Winter Storm Uri had a disproportionate impact on individuals who already lacked appropriate and nutritious food. The disruption in food supply chains, closure of grocery stores, and hazardous road conditions created additional barriers, worsening underlying food insecurity. These factors were not sufficiently accounted for in planning documentation.

- **Recommendation:** Include provisions in planning documents across all City and County departments with explicit provisions that address the needs of vulnerable populations during emergencies, including those who are food insecure.

Observation: The City does not have a comprehensive, actionable food access plan for providing aid to populations during complex disaster responses, which contributed to food insecurity during the event. This observation is inclusive of sheltering operations as well as general population feeding.

- **Recommendation:** Develop a comprehensive operational disaster feeding plan that includes activation triggers, staffing and leadership, roles of private and public sectors, school districts, contractors, vendors for feeding strategies, timelines, staging, and community-based partners (for example, the Central Texas Food Bank).

Observation: The City's EOP and other relevant planning documents were not sufficiently understood or disseminated to coordinate food access stakeholders in the public, private, and non-profit sectors.

- **Recommendation:** Revise the EOP and other disaster planning documents with planning considerations for non-profits, the private sector, and other relevant community-based service delivery organizations.

Observation: The City and County Water Points of Distribution (PODs) did not include food distribution in operations or planning. This lack of integration and inclusion at Water PODs reduced the ability of the community to access food through centralized and accessible distribution channels.

- **Recommendation:** Integrate a Food Access Leadership Team or equivalent stakeholder group in planning and preparedness activities. Utilize this group in identifying appropriate tactics for addressing community needs.

Logistics and Supply Chain Management

Observation: There was an inadequate distribution system as both private sector and non-profit supply chains, distribution points, and networks required to sustain food access failed or were impaired. As a result, community-based organizations, non-profits, and other stakeholders faced additional barriers in distributing food to those most in need, as both their supply chains and that of the private sector were impaired.

- **Recommendation:** Include considerations for cascading impacts on supply chains. This should include utilization, collaboration, and coordination of community groups and the private sector.

Observation: Non-profit organizations that focused on access to food and water lacked the logistical capacity in warehousing, pre-staging, and distribution to adequately respond to the community's needs, particularly in the initial 72 hours of the response.

- **Recommendation:** Develop practical solutions for better stockpiling or accessing enough shelf-stable meals and water for 72 hours for targeted distribution. Coordinate pre-staging efforts with organizations best positioned to aid communities most in need. This initiative must include provisions for sufficient funding and restocking. In addition, invest in a variety of shelf-stable meals that meet many considerations, including dietary needs (e.g., low sodium) or cultural sensitivity, if deemed financially or logistically practical.
- **Recommendation:** Codify roles and responsibilities as practical during emergencies between the City, County, and community-based organizations and private companies in writing through a memorandum of understandings (MOUs) or equivalent documentation or process. Include defined activation triggers, key performance indicators (KPIs), and means of coordination and resourcing.

Observation: The private sector is an integral part of the supply chain and provides crucial food support to communities during the response and recovery period. The role of private companies, such as grocery stores and restaurants, likely could have been better coordinated before the storm.

- **Recommendation:** Codify relationships with private companies regarding their roles in planning and operations during disasters and catastrophic events, including supply chain management. Implement in accordance with the recommendation directly above.

Observation: The overall response operation lacked a sufficient system or process for vetting, accepting, and distributing unsolicited donations. At times, food donations were inappropriate for the population served.

- **Recommendation:** Develop or revise the policy for receiving and distributing donations that match the needs of residents. Implement a public information initiative to widely understand the process for receiving and distributing donations by the whole community, including response agencies and organizations.

Operations and Response

Observation: Non-profit and community-based organizations not previously active in disaster response were not aware of how to receive information on cost reimbursement eligibility for their activities during an emergency response. Instead, these organizations relied on existing budget resources or private donations.

- **Recommendation:** Develop clear guidance and communication for community-based groups and NGOs active in disaster response regarding cost recovery. Provide financial and cost recovery training or information by partnering with Central Texas Voluntary Organizations Active in Disaster (VOAD) to educate all community-based organizations active in disaster response and recovery.
- **Recommendation:** Create an accessible list for approved emergency response purchases eligible for reimbursement and make this resource available to non-profits and community groups.

Observation: Non-profit organizations with deep and significant knowledge of community needs had not previously been included in the EOC structure. This lack of inclusion contributed to a lack of clarity on their roles and responsibilities and the roles and responsibilities of City and County departments, inhibiting food access operations.

- **Recommendation:** Identify and implement best practices for coordinating, integrating, and utilizing community-based organizations in emergency response operations, including the consideration of workshops, training, and exercises.

Observation: Operational areas within the EOC relating to food access for the COVID-19 pandemic were overly compartmentalized and were not transitioned to support winter weather emergency response activities in a timely or immediate process, hindering the operational response.

- **Recommendation:** Consolidate food access areas within the EOC into a cohesive branch or task force during future disaster response operations.

Equipment and Infrastructure

Observation: Lack of access to storm-ready transportation impeded delivery of food and water during periods of heavy snowfall and other adverse weather conditions. This lack of transportation capacity impeded the City, County, and community-based organizations in their response to address community needs.

- **Recommendation:** Incorporate solutions on access to transportation for vulnerable populations in planning, preparedness, and response. These solutions should provide access to life-sustaining goods and services during emergencies.

Communication and Coordination

Observation: There was a lack of coherent messaging to the community regarding access to food services. Community members, including vulnerable populations, did not always understand how best to access available resources to address needs.

- **Recommendation:** Identify practical solutions to increase accessible and uniform communication, or “messaging,” across multiple communication channels (for example, social media, legacy media, flyers).
- **Recommendation:** Establish a process to better incorporate food access and information on mass care services for the public to the Public Information Officer (PIO) and Joint Information Center (JIC). For example, identify a direct contact to provide information across departments and the EOC.

Observation: There was a lack of adherence to public health measures during the event. Residents collected drinking water from swimming pools and melted snow, which was a potential health and safety concern.

- **Recommendation:** Continue to implement public messaging that includes health and safety considerations for residents in multiple event scenarios (for example, storm, wildfire, and pandemic response).

Staffing

Observation: Gaps in leadership and coordination made it more challenging to address unmet community needs, including limited staffing of the Mass Care Branch during the initial 120-hour response period. In addition, understanding the scope of need in coordinating food access beyond shelter operations was not immediately identified in response to Winter Storm Uri.

- **Recommendation:** Identify and incorporate County and City food policy representatives (e.g., City Food Policy Manager or other representatives) into all disaster response and preparedness operations, specifically the EOC command structure.

WATER

Overview

Winter Storm Uri storm caused thousands of residents to lose water for multiple days. The loss of water pressure in the distribution system resulted in Austin Water issuing a boil water notice to its customers in southwest Austin, and later customers citywide. Community groups, individuals, and private businesses mobilized, often in innovative ways, to provide water to individuals in need. Some members of these groups identified gaps in the government response. The City and County moved quickly after the issuance of the boil water notice to order drinking water. Water took several days to arrive due to road conditions and competing state-wide demands. Once it did, the City and County distributed potable water to critical facilities, partner organizations for onward distribution, and PODs.



FEB 10

The Austin Water Incident Management Team is placed on standby.



FEB 19

23,334 cases of water arrive from FEMA and TDEM.



FEB 23

The Boil Water Notice is lifted for the City of Austin and Travis County.

Strengths

Strength: NGOs, non-profit organizations, and the private sector utilized their community knowledge, relationships, and an effective means of collaboration to both provide water and assist the City and County in distribution, particularly to vulnerable populations and those with functional needs who could not access drive-through water PODs.

Strength: City and County emergency response leadership exercised decisive decision-making to purchase one million gallons of water utilizing a pre-positioned contract with an industrial supply company. This decision was in the context of the state-wide disaster when multiple jurisdictions were competing for resources. The decision was instrumental in distributing water to those in need.

Strengths: Several agencies took immediate action to distribute water to residents and coordinated effectively across departments. For example, CapMetro conducted outreach to 3,000 residents following a request from the EOC and delivered over 300 cases of water on the first day of water distribution.

Areas for Improvement

Planning and Preparedness

Observation: The City and County adjusted response operations to address the needs of individuals without access to transportation, older adults, or people with access and functional needs. These actions did not fully address gaps in service delivery to vulnerable populations.

- **Recommendation:** Develop or revise the emergency water distribution plan to include more explicit and actionable considerations for older adults, people with access and functional needs, and those without access to transportation. Additionally, integrate practical emergency water distribution planning with the mobile feeding plan.

Observation: The EOC did not immediately have on hand the location and needs of vulnerable populations. The delayed access to departmental data hindered the ability of the water operation to provide services to those most in need.

- **Recommendation:** City and County departments should develop policies and protocols for sharing, utilizing, and analyzing data on the needs and location of vulnerable populations. Consider using this data in identifying distribution strategies for future response operations. This should be implemented with other data sharing and analytics recommendations.

Observation: The planning for water POD operations had worked efficiently during the 7-day 2018 boil water notice response operation but had not been revised to consider a system-wide disaster, including the impacts on traffic control and coordinated needs beyond water, like food.

- **Recommendation:** Revise planning and location of POD operations to account for system-wide impacts, including large numbers of vehicles and pedestrians and resources beyond water, like food.

Logistics and Supply Chain Management

Observation: Winter Storm Uri resulted in widespread disruptions to the availability of potable water, and the City and County lacked sufficient emergency water stocks to address this shortage during the initial 72-120 hours of the response.

- **Recommendation:** Provide departments with an emergency supply of potable water and food in the 72–120-hour response period to sustain essential services, and include actionable provisions in emergency planning documentation for the provision of potable water and food.

Observation: The City sought to utilize an existing contract with an event management vendor for water POD operational support, but the company was not available. A contract with an alternative company had to be negotiated during the response, resulting in a delay of water POD operations.

- **Recommendation:** Conduct a comprehensive gap analysis of vendor contracts to identify action stand-by contracts with vendors able to respond during a disaster with system-wide impacts. In addition, identify areas of strategic and operational overlap in plans, resource needs, and procedures between the County and City, specifically consolidating services to a single vendor when practical.

Observation: The EOC Logistics Section experienced delays in their water distribution supply chain because the receiving locations lacked adequate equipment to receive palletized water. The time spent negotiating and coordinating with receiving locations resulted in inefficiencies and a strain on resources.

- **Recommendation:** In areas that cannot be covered or addressed by the EOC, identify alternative distribution strategies with vendors or organizations that include the necessary equipment and other capabilities to meet service delivery demands (e.g., forklifts and trained forklift operators).

Observation: In some instances, departments were willing to support the response to Winter Storm Uri outside the normal scope of services and went above and beyond to serve their community. However, these activities resulted in additional unforeseen tasks placed on the department, taxing already limited resources.

- **Recommendation:** Where agencies, organizations, or community partners go above and beyond their traditional duties, establish methods to adequately commend individuals, departments, or organizations and recognize them for their service.

Observation: Identifying and establishing communication with those in decision-making roles at utility companies was crucial in assessing and responding to power and water outages. However, the City and County command leadership lacked real-time information on power and water infrastructure functions.

- **Recommendation:** Develop a system to maintain current contacts at utility companies that the EOC can utilize to assess and communicate operational functions in emergency responses.

Equipment and Infrastructure

Observation: Austin Water staff experienced challenges monitoring an up-to-date view of service disruptions and communicating their system's status to those outside their organization. Austin Water was in the pilot phase of a full system-wide installation of digital water meters, and thus did not yet have access to timely information.

- **Recommendation:** Continue updating water meters to be digital water meters, allowing staff to better understand the system from one central location. In addition, Austin Water should identify cost-effective methods for monitoring system health and outages and sharing this information with the EOC.

Observation: Water was primarily distributed through single-use plastic bottles, which were not the most efficient method for distribution to multi-family households or housing complexes. The City and County attempted to transport water; however, the shortage of bulk water carrying devices such as water drums and availability to sanitize and fill large containers prevented the use of bulk water distribution during the response.

- **Recommendation:** Identify and implement more sustainable methods of water distribution that reduce or eliminate reliance on single-use plastic. Include these and other sustainability considerations in the updated water distribution plan.

Observation: The lack of resilient infrastructure in hospitals and City and County facilities exacerbated broken pipes and water leaks, further depleting water storage in Austin's water system and causing more widespread outages.

- **Recommendation:** Investigate with critical stakeholders the potential for adding resilient water infrastructure for hospitals and City and County facilities deemed critical and essential during emergencies. These investments should include installing backup systems, such as water connectors at hospitals and other large facilities, fully compatible with the equipment used by local emergency responders.

Observation: The County Exposition Center, used to coordinate water distribution, had limited capability. The facility lacked the necessary equipment to be operational in the direct distribution model needed for Winter Storm Uri, such as a loading dock and forklift. This lack of equipment and facility capability impeded the water distribution effort.

- **Recommendation:** Identify operational facilities, such as logistics hubs, that can be used in various disaster-related operations with multiple distribution models. Equip these facilities with redundant and durable infrastructure, equipment, and trained personnel for response operations.

Communication and Coordination

Observation: As areas surrounding the City began experiencing a loss of water pressure, there was conflicting messaging about the possibility of an incoming boil water notice, and some residents filled up bathtubs to store water. As a result of this increased usage, there was more strain on the water system,

leading to shortages and outages. Most residents did not understand how their use would impact the water system.

- **Recommendation:** Strengthen and communicate ways the public can contribute to power and water conservation efforts during emergencies through public information campaigns, including the impact of personal usage of power and water when the systems are at risk of outages.

Observation: Landlords failed to understand their responsibility or took limited actions to provide water to tenants and relied on non-profit organizations and City departments to deliver water and restore normal water functions.

- **Recommendation:** Identify the City and County departments that have oversight of the obligation of landlords and rights of tenants during a disaster or emergency. Task this agency with providing communication materials that explain these rights and obligations.

Observation: The Travis County Sheriff's Office (TCSO) was not aware of the possibility of an incoming boil water notice. A lack of warning or communication challenged the TCSO's ability to provide food and water to their population.

Recommendation: Develop and implement a procedure that informs City and County departments of a boil water notice prior to public notification.

SHELTER

Overview

During Winter Storm Uri, the City set a record of 144 consecutive hours of below-freezing temperatures. The sheltering operation, envisioned for short-term overnight accommodation, quickly transitioned to long-term accommodation over multiple days. Shelters and warming centers experienced understaffing, loss of power and water, and in some instances, overcrowding and security concerns. Due to the loss of power and water, some shelter residents had to be transported to alternative facilities. Approximately 770 individuals sought overnight shelter in a single night within eight facilities coordinated through the EOC and partner agencies. The Palmer Events Center, the largest shelter operated during the storm, completed its demobilization on February 26th, 2021; it operated for 13 days and provided shelter to 846 people and 38 animals.



FEB 9

Austin Public Health
Homeless Services
Division requests
HSEM activate their
Cold Weather
Sheltering Plan



FEB 11

The City of Austin
opens three shelter
locations at recreation
centers.



FEB 18

Social Service
workers arrive at
Palmer Events Center.

Strengths

Strength: Staff at the Palmer Events Center demonstrated extraordinary resilience in providing services to a population with significant access and functional needs, criminality, drug use, and housing insecurity.

Strength: PARD successfully transitioned its operation to support sheltering for unhoused populations, and PARD, AISD, and a local church supported sites sustained operations despite failures in water infrastructure.

Strength: The Austin Independent School District (AISD) addressed gaps in the availability of sheltering, establishing shelters and warming centers for those in need.

Strength: The Austin Disaster Relief Network was able to supply shelter workers through their vast network of churches to assist in shelter and mass care operations.

Strength: County Health and Human Services and Austin Public Health (APH) worked collaboratively to provide case management services for the mega-shelter at Palmer Events Center, which allowed the EOC and public officials to better understand the needs of the population. Case management was coordinated at supplemental EOC-supported shelters as needed.

Areas for Improvement

Planning and Preparedness

Observation: While multiple Mass Care and Sheltering plans exist, the City and County lack a comprehensive, accessible, and actionable Mass Care Plan. The lack of a comprehensive planning document hindered coordination, service delivery, and implementation of sheltering operations.

- **Recommendation:** Revise and establish in the City and County a comprehensive and scalable mass care plan, utilizing the FEMA definition of mass care. Implement a sustainable training approach on the plan's contents. This action should include an evaluation of current planning documents, gaps and areas for improvement, and an explicit definition of roles and responsibilities across departments and the community.

Observation: The number and durability of shelters established by the City and County were insufficient to address the population's needs. The shelters utilized lacked hardened infrastructure, such as backup power and water, and some did not account for COVID-19 considerations.

- **Recommendation:** Identify a list of shelters with durable infrastructure, including heating, ventilation, and air conditioning (HVAC), spaces to accommodate large groups, backup power, and water.

Observation: The lack of pre-identified locations contributed to unforeseen challenges in identifying sites in real-time during the response to Winter Storm Uri. This ad hoc approach to setting up shelter sites also contributed to gaps in public information regarding shelter locations and services.

- **Recommendation:** Revise the shelter plan with pre-identified sites for future disaster responses with an accompanying public information campaign to notify residents of shelter locations in a timely and actionable manner. Integrate this into the revision of mass care planning.

Observation: Some residents at Palmer Events Center engaged in criminal activity, including drug dealing and prostitution. Other residents exhibited behavioral health issues and severe mental illness. The shelter team also reported that they feared and were close to losing control of the building due to the security situation. Services were deemed inadequate for these issues during the first 120 hours of the response.

- **Recommendation:** Include and address the role of law enforcement, mental and behavioral health services, and the departments responsible for these services in mass care and social services planning and provisions for shelter residents. Adequately fund and staff their activities.
- **Recommendation:** Develop law enforcement staffing plans for sheltering operations to maintain clear roles, responsibilities, and expectations. In addition, establish clear guidelines with law enforcement regarding shelter policies so all residents seeking access to life-sustaining services feel safe to do so.
- **Recommendation:** Include specific and comprehensive provision on sheltering within the revised approach to mass care planning, including minimum standards in infrastructure, services, roles, and responsibilities.
- **Recommendation:** Disseminate the shelter and warming center rules and expectations to all residents. These rules should be incorporated into accessible field operational guides for administering shelter operations.

Observation: The shelter team was unable to follow COVID-19 reduced capacity guidelines at the Palmer Events Center due to the overwhelming demand for service. The sheltering plan did not include accessible, alternative locations for overflow once capacity was reached.

- **Recommendation:** Develop a congregate sheltering plan that includes COVID-19 recommendations for reduced capacity. Identify and coordinate alternative shelter locations as part of planning efforts to identify durable shelter locations.

Observation: Shelters lacked a consistent feeding plan and the ability to secure a steady food supply from vendors in the initial 120 hours of the response given the icy conditions and lack of power. This contributed to the rationing of available shelf-stable meals and food availability through informal channels. Some of these meals did not adhere to hygiene standards, which may have contributed to observed symptoms of foodborne illnesses.

- **Recommendation:** Develop a comprehensive shelter feeding plan that accounts for resources at the City, County, and State levels. Include parameters for proper standards for food handling and service to prevent foodborne illness. Integrate this comprehensive feeding plan into the broader mass care planning efforts.

Observation: Departments and supporting agencies responsible for supporting persons experiencing homelessness lacked the staffing and overall capability to respond to the community's needs during a disaster with system-wide impacts. This lack of staffing placed additional responsibilities on other departments and already limited resources.

- **Recommendation:** Develop an encampment disaster outreach plan to better integrate services for persons experiencing homelessness in disaster response operations, and reduce the burden on departments with insufficient capacity or mandate to care for persons experiencing homelessness.

Logistics and Supply Chain Management

Observation: A significant number of shelter locations lacked access to sufficient food, water, showers, clothing, and other services in the initial 120 hours of the response. General population shelters were not adequately stocked with resources to provide typical operational functions (e.g., utensils, plates, bowls, water, serving utensils).

- **Recommendation:** Identify Mission Ready Packages and stand-by services or contracts inclusive of components for operations during the initial 120-hour response period. Mission Ready Packages should include essential services and resources, portable showers, access to food, feeding supplies, and water.
- **Recommendation:** Evaluate pre-positioning resources at shelter locations or strategic locations throughout the City and County in the event of a disaster. For example, develop kits that include feeding supplies, medical supplies, pre-printed signage, registration sheets, and other critical records. Identify procurement and distribution mechanisms that allow for the just-in-time purchase of goods within acceptable limits.

Observation: An identified need for adherence to procurement rules hindered staff from purchasing food quickly. In combination with difficulty finding staff and transportation to bring the food and a lack of real-time data on locations and the number of people to be fed, access to food at sheltering locations was reduced.

- **Recommendation:** Identify alternative purchasing and procurement requirements to address feeding needs that remain unmet or if a pre-event contract is not established for feeding vendors. Develop and implement activation triggers as part of a revision to sheltering and mass care planning that allows for the timely procurement of food.
- **Recommendation:** Educate community-based organizations on the system for requesting and coordinating resources. Additionally, designate a point of contact for community-based organizations to submit resource requests during a future disaster or emergency.

Operations and Response

Observation: The City departments responsible for services at the Palmer Events Center did not establish a common operating picture during the initial response period. This included the lack of communication of the scope of services provided at shelters and warming centers. This lack of clarity led to confusion regarding the scope and duration of services.

- **Recommendation:** Define explicitly the roles of City and County departments and community-based groups in addressing sheltering for vulnerable populations during emergency events.
- **Recommendation:** Create a sheltering task force or branch within the EOC as part of a more comprehensive and coordinated approach to mass care planning and operations. In addition, review and establish the delineation of roles and responsibilities between departments in sheltering persons experiencing homelessness. Include clarifications in all pertinent plans related to mass care and social services.

Observation: The lack of efficient coordination and clarity of roles between governmental departments resulted in a delay and absence of services for persons experiencing homelessness.

- **Recommendation:** Incorporate and include the network of organizations and agencies that provide services for persons experiencing homelessness (e.g., groups focused on advocacy and providing wrap-around services) in disaster sheltering planning and operations.

Communication and Coordination

Observation: Not all persons experiencing homelessness are registered with the City's emergency messaging system designed to provide information and resources via text, such as shelter locations, during emergencies.

- **Recommendation:** Increase outreach to homeless encampments to increase the number of registrants in the emergency notification system. Execute this outreach according to a baseline indicator that enables the measurement of results.

Staffing

Observation: The City has trained shelter managers in many departments. However, there is no system to regularly train, manage, and utilize these staff members. This voluntary shelter manager system was insufficient to provide shelter personnel due to conflicting assignments with the ongoing COVID-19 response and access issues caused by inclement weather conditions.

- **Recommendation:** Invest in regular engagement and training of identified shelter managers.

Observation: The City and County experienced shortages in the availability of trained volunteer shelter staff. Volunteers were not available from organizations that regularly provide shelter support. The command structure for mass care operations was short-staffed during the initial 120-hour response period, including the absence of a mass care branch director. In some cases, adequate staff was not available to support the 24-hour operations required for sheltering.

- **Recommendation:** Develop and train an adequate number of shelter staff, leadership, and volunteers. This should include volunteers from the public, City staff, command and shelter leadership, and representatives from non-governmental organizations
- **Recommendation:** Create a scalable contingency plan for delivering shelter and mass care services if volunteers are unavailable, including pre-vetting and leveraging other community partners qualified to provide disaster mass care operations and shelter services.

Training and Exercises

Observation: The Incident Commander (IC) at the Palmer Events Center, while senior and well-experienced in incident management, did not include a trained shelter manager. Though a trained shelter manager was eventually identified as a need, requested, and deployed to Palmer, it was determined not a suitable fit for the individual; consistently trained shelter management staff were not present at the site. In addition, a lack of just-in-time training materials may have contributed to the inability to meet some general standards in congregate shelters.

- **Recommendation:** Develop and implement shelter training for City and County staff. In addition, establish shelter position checklists and an on-boarding process for shelter workers and volunteers.

MEDICAL

Overview

The cascading impacts of Winter Storm Uri created barriers for hospitals and medical personnel providing care to residents in need. Some area hospitals lost access to water and heat. A breakdown in the supply chain challenged their ability to restock critical medical supplies. Fire stations, police departments, and Emergency Medical Services (EMS) in the City and County suffered a loss of power and water. Dialysis patients and those with power-dependent medical equipment turned to already stressed hospitals for life-saving support. At the same time, ambulances struggled against inclement weather and dangerous road conditions to transport patients. First responders in the City and County received high call volumes throughout the response. EMS received more than four times their average call volume from residents requesting medical assistance, food, water, and shelter.



FEB 15

EMS receives 1,435 calls for service.



FEB 19

EMS begins experiencing radio communication issues.



FEB 20

17 AFD stations are without water, electricity, or both.

Strengths

Strength: EMS successfully utilized support agencies, such as Austin Fire Department (AFD), and leveraged their technical knowledge to restore water to hospital facilities.

Strength: EMS utilized pre-positioned contracts with private ambulance providers to assist the transportation of patients. This decision allowed for more resources to be available for EMS to respond to high-priority cases.

Strength: Once activated, coordination among the EOC, MOC, Capital Area of Texas Regional Advisory Council (CATRAC), and local emergency medical and healthcare providers was timely and effective. This coordination was successful in part due to previous working relationships built during the ongoing response to COVID-19.

Areas for Improvement

Planning and Preparedness

Observation: Hospital facilities had 96-hour plans to maintain services, but the duration of the storm and its cascading impacts outlasted the contingency plan. For example, several hospitals were very close to losing power and water during Winter Storm Uri.

- **Recommendation:** Develop early identification plans for winter weather that allow hospitals a more substantial window of time to pre-stock essential resources.

Observation: AFD and EMS modified their response procedures to medical emergencies due to a significant increase in call volume resulting from Winter Storm Uri. A lack of coordination between the departments led to confusion over which agency would address the increased number of calls, delaying the response from emergency services agencies.

- **Recommendation:** Review and refine the 9-1-1 EMS Response Modification plan to better align the priorities of medical calls between AFD, EMS, and the Office of the Chief Medical Director.

Observation: Essential medical service providers such as pharmacies and methadone clinics were unable to operate due to the loss of power and running water. In some instances, shelter residents who had severe drug dependencies received medical care from shelter staff due to an inability to access treatment programs.

- **Recommendation:** Include considerations for the treatment of drug dependencies in a shelter setting and ensure proper resources and services in the event of system failures.

Logistics and Supply Chain Management

Observation: Some residents who use oxygen concentrators called 9-1-1 for medical assistance after their oxygen bottle supply was depleted. A lack of preparation by residents using oxygen concentrators and a lack of agreements between the City and oxygen supply companies led to the transport of these

individuals to the hospital. This lack of preparation contributed to the increase in call volume received by EMS and AFD and placed additional strain on the City and County hospitals.

- **Recommendation:** Establish agreements with medical oxygen supply companies to coordinate disaster preparations for people who use medical oxygen and include considerations for those with functional needs in mass care shelter planning.

Observation: Due to the dangerous road conditions, area hospitals were challenged when restocking necessary resources such as food, water, and fuel for generators.

- **Recommendation:** Develop a plan to pre-position vital resources for hospitals in accessible locations throughout the community in inclement weather and poor road conditions, and include maintenance of the resources as part of the plan. Develop agreements among area hospitals to share pre-positioned supplies and restock as needed.

Operations and Response

Observation: There was a lack of clarity on who had the authority to activate the MOC and begin medical care operations. As a result, the MOC was not immediately activated by the EOC.

- **Recommendation:** Review and revise the SOP to activate the MOC and identify an authority to determine when notification and activation are required.

Observation: Long-term care facilities, nursing homes, and other ancillary healthcare facilities had challenges maintaining operations following the loss of power, water, and disruption to the supply chain. The MOC and the EOC also had challenges coordinating with some of these stakeholders, such as long-term care facilities and pharmacies, as they are not represented in the healthcare disaster planning coalition.

- **Recommendation:** Continue to integrate long-term care facilities, nursing homes, hospice, and service providers for medical oxygen, dialysis, mental health, and pharmacy service into the regional healthcare disaster planning coalition.

Equipment and Infrastructure

Observation: EMS was inundated with requests to assist dialysis patients. Dialysis centers did not have the infrastructure resilience to continue operating during the storm and relied on already stressed EMS resources for life-saving support.

- **Recommendation:** Strengthen relationships with dialysis centers, educate centers on available EMS resources, and include CapMetro and CATRAC in planning to accommodate patients' transportation needs.

Observation: The City and County planned for but were unable to operate the initial site of the medical care shelter due to a failure in infrastructure at the facility. Individuals seeking medical services at the medical shelter location were transferred to shelters or hospitals. A lack of hardened infrastructure for the medical shelter location resulted in a delay in operation until an alternative facility was located.

- **Recommendation:** Identify locations that can function as medical shelters which have the supporting infrastructure for all-hazard events.

Observation: Transporting both staff and patients proved challenging due to inclement weather conditions. City and County ambulances are not equipped to operate in winter weather conditions. For example, EMS did not have snow chains for ambulances or other equipment for crews to respond to severe winter weather emergencies.

- **Recommendation:** Identify cost-effective solutions for upgrading the public safety vehicle fleet to be able to function in various weather events. This should include considerations for purchasing all-wheel-drive vehicles.

Observation: A lack of EMS personnel-related winter equipment (e.g., slip-on rubber cleats, hand warmers, power bars, and other supplies) contributed to EMS crew challenges and safety concerns during the response.

- **Recommendation:** Invest in durable and practical solutions for stockpiling winter supplies (e.g., slick-on rubber cleats, hand warmers) for EMS staff, vehicles, and patient care. Identify and implement a plan for their upkeep and maintenance.

According to After-Action Survey Respondents:

31% reported concerns for their personal safety that impacted their ability to work. Some respondents noted that department leadership did not always provide guidelines or safety equipment to ensure safe operation during the storm. 29% of respondents reported a lack of safety equipment, such as ice cleats and deicing equipment.

Observation: Agencies that do not typically support emergency response operations had vehicles available to assist in response but could not sync into the dispatch system or use tracking technology. The lack of functional technology impeded agencies' ability to assist in response operations.

- **Recommendation:** Configure vehicles with functional technology such as Mobile Data Computers (MDC), radios, or tablets to allow departments and community-based partners to participate in response operations.

Communication and Coordination

Observation: Some residents who depend on electric-powered medical equipment called 9-1-1 for assistance. A lack of public awareness of the availability of the City's Medical Shelter at the Austin Convention Center led to emergency response personnel transporting these individuals to a hospital.

- **Recommendation:** Develop and implement a communications plan for the medical shelter operation to relieve strain on hospitals and direct residents to the appropriate shelter facility.

TRANSPORTATION

Overview

Storm conditions made clearing roadways difficult despite immediate efforts to do so by the City, County, and State. Responders and emergency services personnel prioritized clearing critical roadways and sidewalks near hospitals, shelters, and POD locations. They faced challenges in the lack of access to sufficient winter-weather equipment. Multiple vehicle pileups and crashes from those attempting to travel in inclement conditions endangered first responders and resulted in numerous road closures. Many residents, particularly vulnerable populations, could not access essential resources such as food, water, and medical care due to the lack of transportation or maintained roadways. Travis County had specific challenges in accessing roads in more remote locations.



FEB 10

Critical infrastructure is treated in preparation for Winter Storm Uri.



FEB 14

Texas Department of Transportation (TxDOT) urges residents to stay home to keep roads passable for first responders.



FEB 21

Metro Access delivers 280 cases of water to apartment locations and makes 61 home deliveries.

Strengths

Strength: CapMetro proactively began storm preparations on Thursday, February 11, 2021. Leaning forward with preparations for their agency allowed CapMetro to pivot to changing mission requests from the EOC.

Strength: CapMetro provided regular transportation to shelters from multi-family housing units that were evacuated due to loss of power and water, among other shelter transport activities.

Strength: The City and County were proactive in treating roads, bridges, and sidewalks in high-traffic areas such as shelters and hospitals.

Strength: Community groups provided a pool of drivers with four-wheel drive vehicles to transport individuals to shelters or other essential sites and then later deliver essential supplies (food, water, and other supplies) during the days when driving was most treacherous.

Strength: Key City departments utilized their available resources, such as vehicles and staff, to assist in water transport during Winter Storm Uri.

Areas for Improvement

Planning and Preparedness

Observation: The Texas Department of Transportation (TxDOT) was able to keep the majority of essential (Tiers 1 and 2) roadways open. Less critical roadways (Tiers 3 and 4) were maintained by individual request (e.g., connection to critical infrastructure).

- **Recommendation:** Disseminate the tier system used by TxDOT to the City of Austin and Travis County's transportation, law enforcement, and emergency management stakeholders to maintain common terminology and operating picture.
- **Recommendation:** Develop a roadway clearing plan, including which roadways to clear, how far to clear them, and who is responsible for clearing them.⁴
- **Recommendation:** Re-evaluate the list of priority roadways, sidewalks, fire hydrants, and critical infrastructure to be treated and cleared in winter weather planning.⁵
- **Recommendation:** Partner with the private sector to provide transportation alternatives that increase access to life-sustaining services, food, pharmacy, and health support.

Observation: Residents across Austin, particularly vulnerable populations, experienced difficulties accessing public transportation, as routes were limited due to the road conditions. The lack of a backup transportation plan for these groups contributed to challenges with accessing the warming centers and shelters in the first 120 hours of the response.

⁴ TNR is currently developing a Winter Weather Response Plan.

⁵ TNR does not clear sidewalks.

- **Recommendation:** Develop a transportation plan for vulnerable populations, such as people with access and functional needs and older adults, to access shelters during emergency response.

Logistics and Supply Chain Management

Observation: Law enforcement agencies in the City and County did not have resources to dedicate to continuous monitoring for ice accumulation on highways. TxDOT has the primary jurisdiction for interstates but similarly did not have the resources available to monitor highways. Additional resources from other transportation and law enforcement agencies would have better been able to mitigate the risk of roadway ice accumulation through early identification of hazardous highways.

- **Recommendation:** Identify resources and partnerships that can supplement law enforcement agencies to monitor ice accumulation on critical roadways during future disasters or emergencies.

Operations and Response

Observation: During Winter Storm Uri, some residents called 9-1-1 to request transportation from their residences to a warming center or shelter. No coordinated system was established to input needed contact information and identify the appropriate department to transfer the request to, resulting in confusion and delays in emergency transportation response.

- **Recommendation:** Develop a coordinated system for emergency transportation requests and train 9-1-1 dispatch on the procedure for transferring requests to the appropriate department or agency.

Observation: CapMetro's Operations Control Center was overwhelmed with calls and requests from other agencies. There was a lack of a clear process for resource requests to CapMetro during the response. In addition, the EOC did not have updated contact information for emergency management staff at CapMetro.

- **Recommendation:** Establish and document a process for requesting CapMetro resources during EOC activation and other scenarios.
- **Recommendation:** Update emergency points of contact for agencies engaged with the EOC every quarter.

Equipment and Infrastructure

Observation: The City had insufficient access to all-wheel-drive emergency vehicles to aid in transportation during the response. For example, emergency services vehicles such as AFD ladder trucks and EMS ambulances were, in some instances, unable to navigate roadways. As a result, staff and volunteers risked dangerous road conditions and were delayed in their response.

- **Recommendation:** Identify cost-effective solutions for upgrading the public safety vehicle fleet to be able to function in various weather events. This should include considerations for purchasing all-wheel-drive vehicles.

Observation: The City and County had limited resources to provide durable transportation and clear roadways in a manner that addressed the expectations of some County officials and the public. For example, TxDOT had a limited inventory of de-icing material (e.g., brine) for use across the State.

- **Recommendation:** Evaluate the government's inventory of snow and ice removal materials inventory in the Austin-Travis County area and implement a plan for their upgrade based on revised assumptions of multiple hazard events with system-wide impacts.

Observation: The City and County lacked immediate access to a sufficient number of vehicles to transport water to shelters and warming centers. This lack of access to other transportation assets delayed water distribution services and disrupted the City's ability to respond.

- **Recommendation:** Develop a transportation plan with an up-to-date list of community assets and support vehicles that could be utilized to augment City and County assets during response operations.

Training and Exercises

Observation: Not all City departments maintained an inventory of their snow chains; some had snow chains available that did not fit vehicles currently in use. Personnel lacked the training to maintain, operate, remove, and drive using snow chains, and safely drive in winter weather conditions.

- **Recommendation:** Track and maintain an inventory of vehicle snow chains and other winter-storm-ready response equipment, including maintenance and status of equipment. In addition, provide training to frontline personnel on the use and maintenance of this equipment.

TOWARDS A MORE RESILIENT COMMUNITY

The following section introduces the **Winter Storm Uri Improvement Plan (IP)**. The IP identifies actions for improvement in the context of existing priorities for the City and County. Further, the IP establishes deadlines for implementation and designates an accountable department or party for each action. The recommendations are derived from the Incident Analysis in the Winter Storm Uri AAR. The AAR provides the events summary, timeline, and necessary context for the IP and its recommendations. Both the AAR and IP should be read and considered as part of the same document.

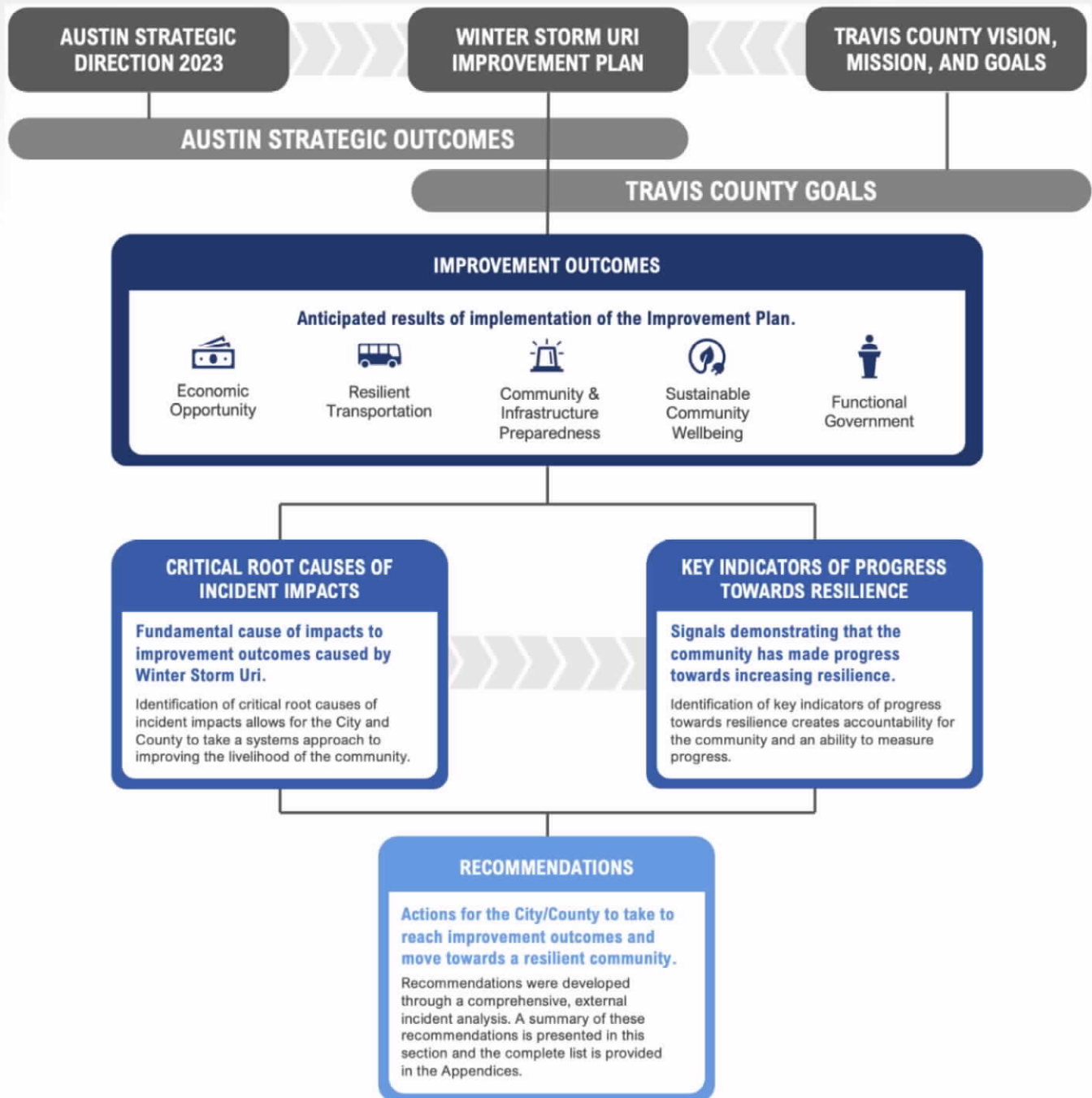
IMPROVEMENT PLAN FRAMEWORK

Recommendations in this IP are presented in two parts. The first part, presented immediately below, categorizes recommendations according to the City of Austin Strategic Direction 2023 and Travis County Vision and Goals (6). The second part, found in Annex D, includes a spreadsheet comprehensive of all recommendations. These recommendations are categorized by the strategic direction, vision, and goals as well as response areas and core capabilities.

Figure 5: City and County Context for the IP



Part one of the IP is organized around five **improvement outcomes**. These improvement outcomes are aligned with the Austin Strategic Direction 2023 and Travis County’s vision, mission, and goals.



For each improvement outcome, the IP features a set of critical root causes of incident impacts and key indicators of progress towards resilience. The critical root causes and indicators of progress were developed based on the after-action report analysis. Data already collected by the City and County, such as data collected for the Austin Strategic Direction 2023 dashboard, can support the measurement of progress.

IMPROVEMENT OUTCOME 1: ECONOMIC OPPORTUNITY

AUSTIN STRATEGIC OUTCOME ALIGNMENT

- Economic Opportunity & Affordability (Having economic opportunities and resources that enable us to thrive in our community).

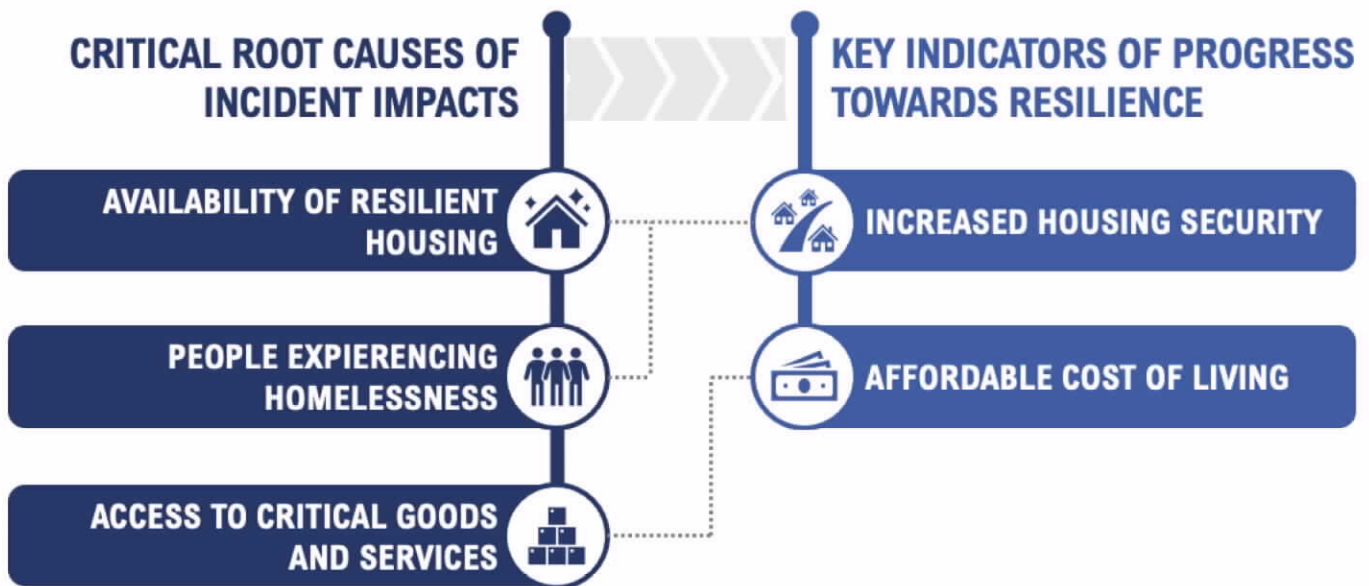
TRAVIS COUNTY GOAL ALIGNMENT

- Promote the wellbeing of our residents through social, economic, and health and safety initiatives.

Measuring Progress

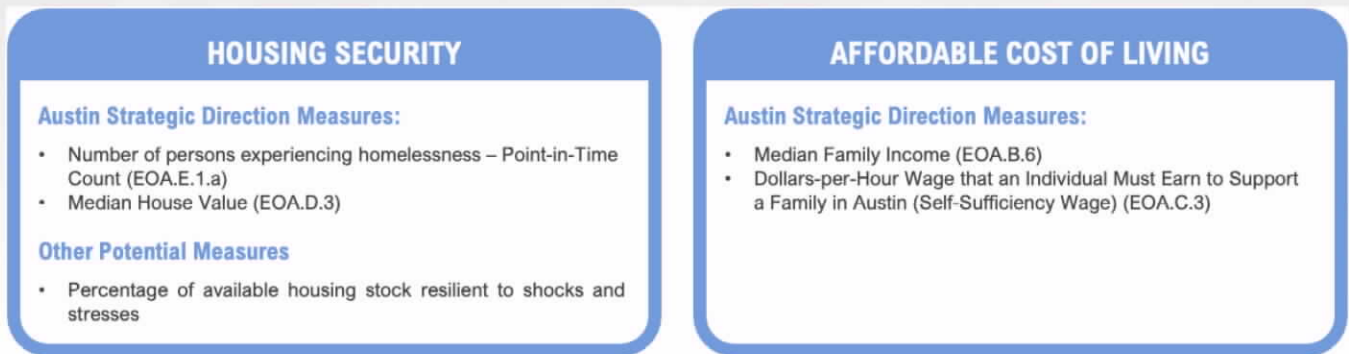
From the incident analysis, critical root causes for this improvement outcome included: lack of availability of resilient housing, shortage of care and support for people experiencing homelessness; and insufficient access to critical goods and services. Key indicators of progress towards resilience include increased housing security and affordable cost of living.

Figure 6: Critical Root Causes and Key Indicators of Progress



Progress is measured by considering metrics such as the availability of housing that is resilient to shocks and stresses, individuals experiencing homelessness, median housing value, median family income, and the wage required to support a family in the community.

Figure 7: Available Metrics for Measuring Progress⁶



Taking Action

The following section outlines the key corrective actions for the City and County's response operation. Key recommendations were selected that best summarized the impacts to the strategic outcome and should be prioritized to make progress most effectively and efficiently towards the strategic outcome.

⁶ City of Austin Strategic Performance Dashboard available here: <https://data.austintexas.gov/stories/s/59fp-raw5>.

Figure 8: Key Recommendations for Improvement

- 1 Evaluate, develop, and implement a policy that requires the provision of the equitable availability and distribution of goods and services in a disaster with system-wide impacts. This policy should align with the definition of "equity" -- or its equivalent policy or definition -- as adopted by the City and County.
- 2 Incorporate and include the network of organizations and agencies that provide services for persons experiencing homelessness (e.g., groups focused on advocacy and providing wrap-around services) in disaster sheltering planning and operations.
- 3 Utilize an equity lens in the distribution of water, food, and wrap-around services. Additional considerations for older adults, residents with access and functional needs, and residents without access to transportation should be taken into account when providing services.
- 4 Increase outreach to homeless encampments to increase the number of registrants in the emergency notification system. Execute this outreach according to a baseline indicator that enables measurement of results.
- 5 Implement communication strategies to increase public awareness of City and County services during disasters. This should incorporate the first 72 hours and 120 hours in a complex disaster with supply chain impacts. Utilize the City of Austin's annual community survey as a means of verification and measurement.

IMPROVEMENT OUTCOME 2: RESILIENT TRANSPORTATION

AUSTIN STRATEGIC OUTCOME ALIGNMENT

- Mobility (Getting us where we want to go, when we want to get there, safely and cost-effectively).

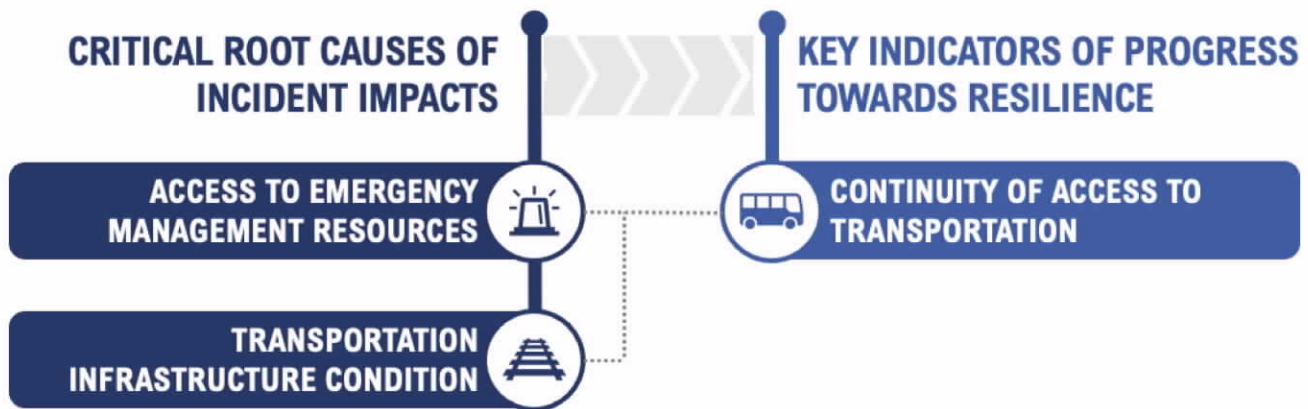
TRAVIS COUNTY GOAL ALIGNMENT

- Foster transportation mobility and accessibility.

Measuring Progress

From the incident analysis, critical root causes for this improvement outcome included access to emergency management resources and transportation infrastructure condition. Key indicators of progress towards resilience include continuity of access to transportation.

Figure 9: Critical Root Causes and Key Indicators of Progress



Progress is measured by considering metrics such as time to clear crashes from major roadways, satisfaction with transportation infrastructure, and preventative maintenance performed.

Figure 10: Available Metrics for Measuring Progress⁷

CONTINUITY OF ACCESS TO TRANSPORTATION

Austin Strategic Direction Measures:

- Number and percentage of customer service requests for removal of high priority blockages in the right-of-way resolved within 72 hours (M.D.5).
- Percent change in average vehicle travel time along major City corridors (M.A.5.b).
- Percent satisfaction with the condition of major City streets (M.E. 1).
- Percent of street inventory maintained by preventive maintenance (M.E.3).

⁷ City of Austin Strategic Performance Dashboard available here: <https://data.austintexas.gov/stories/s/59fp-raw5>.

Key Recommendations

The following section outlines the key corrective actions for the City and County's response operation. Key recommendations were selected that best summarized the impacts to the strategic outcome and should be prioritized to make progress most effectively and efficiently towards the strategic outcome.

Figure 11: Key Recommendations for Improvement

- 1 Develop a roadway clearing plan, including which roadways to clear, how far to clear them, and who is responsible for clearing them.
- 2 Track and maintain an inventory of vehicle snow chains and other winter-storm ready response equipment, including maintenance and status of equipment.
- 3 Develop a coordinated system for emergency transportation requests, and train 9-1-1 dispatch on the procedure for transferring requests to the appropriate department or agency.
- 4 Incorporate solutions on access to transportation for vulnerable populations in planning, preparedness, and response. These solutions should provide access to life-sustaining goods and services during emergencies.
- 5 Develop a transportation plan with an up-to-date list of community assets and support vehicles that could be utilized to augment City and County assets during response operations.

IMPROVEMENT OUTCOME 3: COMMUNITY AND INFRASTRUCTURE PREPAREDNESS

AUSTIN STRATEGIC OUTCOME ALIGNMENT

- Safety (Being safe in our home, at work, and in our community).

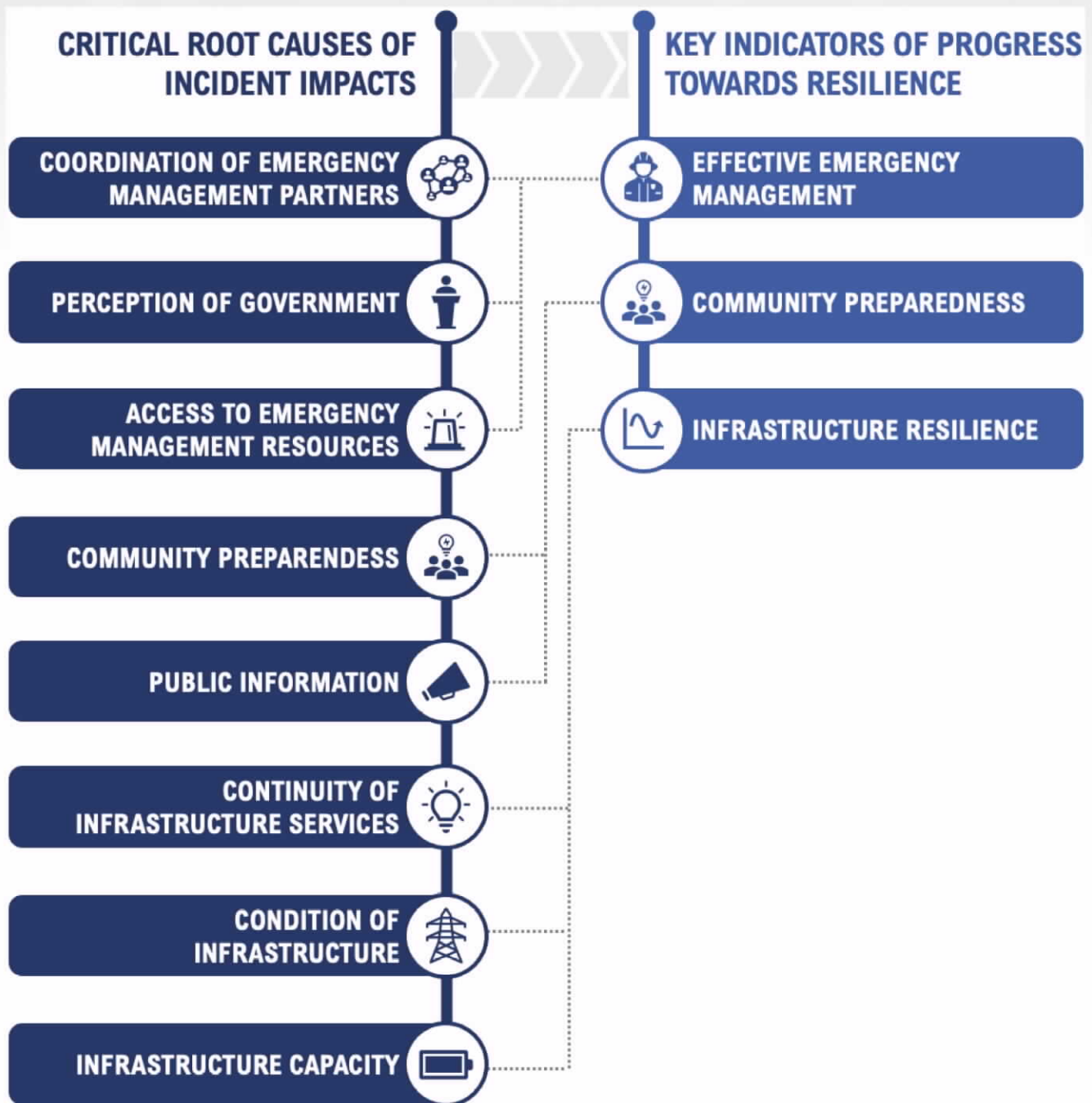
TRAVIS COUNTY GOAL ALIGNMENT

- Promote community resilience in daily living and in times of emergency.
- Promote the well-being of our residents through social, economic, and health and safety initiatives.
- Ensure the public safety and peaceful resolution of conflicts through the justice system and other public processes.

Measuring Progress

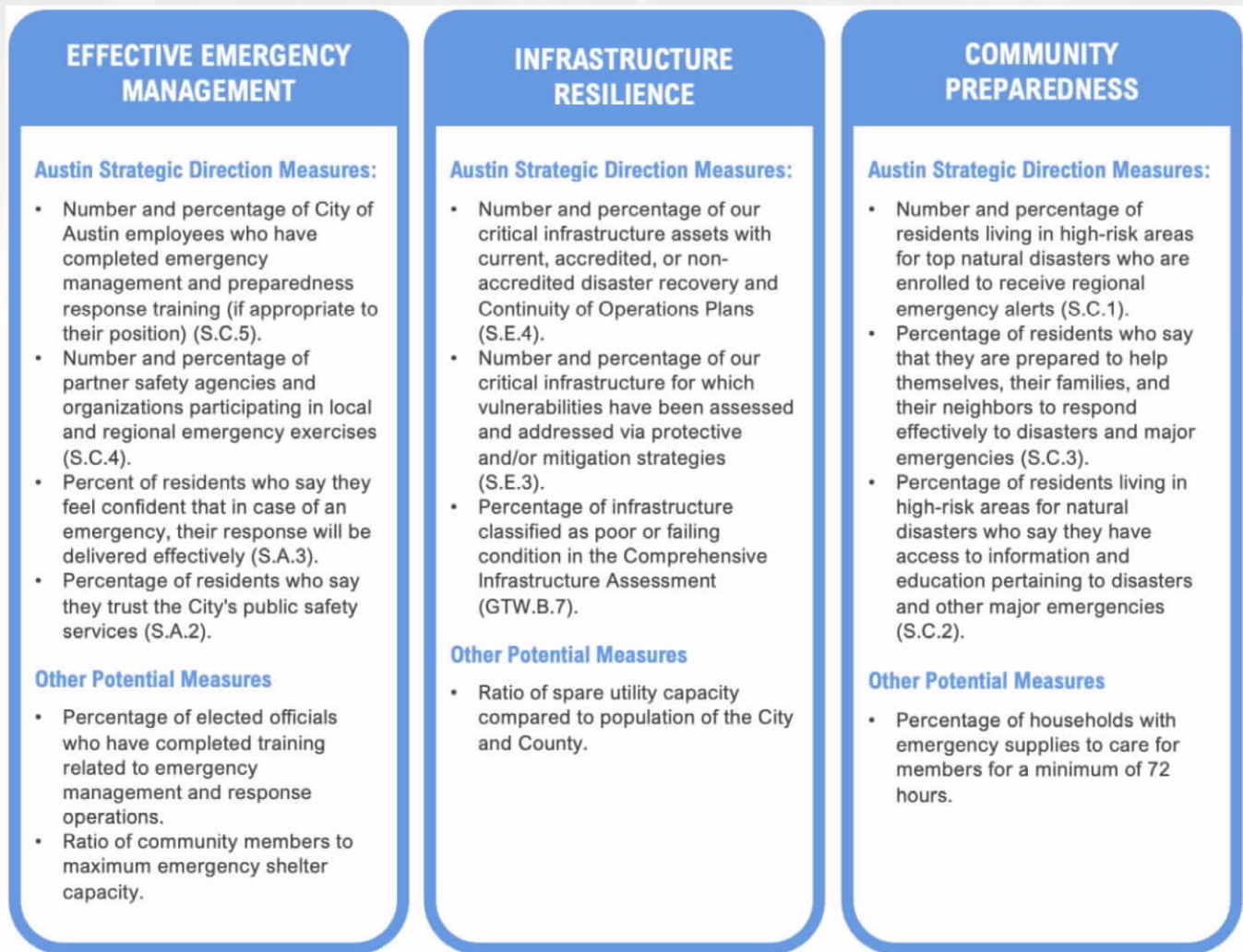
From the incident analysis, critical root causes for this improvement outcome included: coordination of emergency management partners, perception of government, access to emergency resources, community preparedness, public information, continuity of infrastructure services, condition of infrastructure, and infrastructure capacity. Key indicators of progress towards resilience include effective emergency management, community preparedness, and infrastructure resilience.

Figure 12: Critical Root Causes and Key Indicators of Progress



Progress is measured by considering metrics such as elected officials and employees who have completed training on emergency management and response operations, regional participation in exercises, perception of government effectiveness, community members prepared for emergencies, the existence of continuity of operations plans, and infrastructure capacity and maintenance.

Figure 13: Available Metrics for Measuring Progress⁸



Taking Action

The following section outlines the key corrective actions for the City and County's response operation. Key recommendations were selected that best summarized the impacts to the strategic outcome and should be prioritized to make progress most effectively and efficiently towards the strategic outcome.

⁸ City of Austin Strategic Performance Dashboard available here: <https://data.austintexas.gov/stories/s/59fp-raw5>.

Figure 14: Key Recommendations for Improvement

- 1 Enhance coordination between the City of Austin and non-governmental organizations, including relief site management transition and volunteer management.
- 2 Planning, preparedness, and operations should include considerations for cascading impacts that impact supply chains. This should include utilization, collaboration, and coordination of community groups and the private sector.
- 3 Develop a training or conduct an annual exercise for all City and County departments, community partners, and elected officials on relevant planning documents such as the EOP.
- 4 Emphasize strategies for personal preparedness and resilience and further fostering social connections with neighbors and neighborhoods to increase self-reliance. Identify programs, resources, and approaches to improve or encourage whole community resilience and risk reduction prior to, during, and following disasters.
- 5 Evaluate contingency planning with the State of Texas, including dedicated resources for the City or County that is accessible during an event with widespread system impacts. For example, the State of Texas pre-positioned assets in Seguin and Dallas but could not promptly fulfill resource requests due to challenging road conditions and competing requests. Consider locating these resources within the City of Austin or Travis County.

IMPROVEMENT OUTCOME 4: SUSTAINABLE COMMUNITY WELLBEING

AUSTIN STRATEGIC OUTCOME ALIGNMENT

- Health and Environment (Enjoying a sustainable environment and a healthy life, physically and mentally).

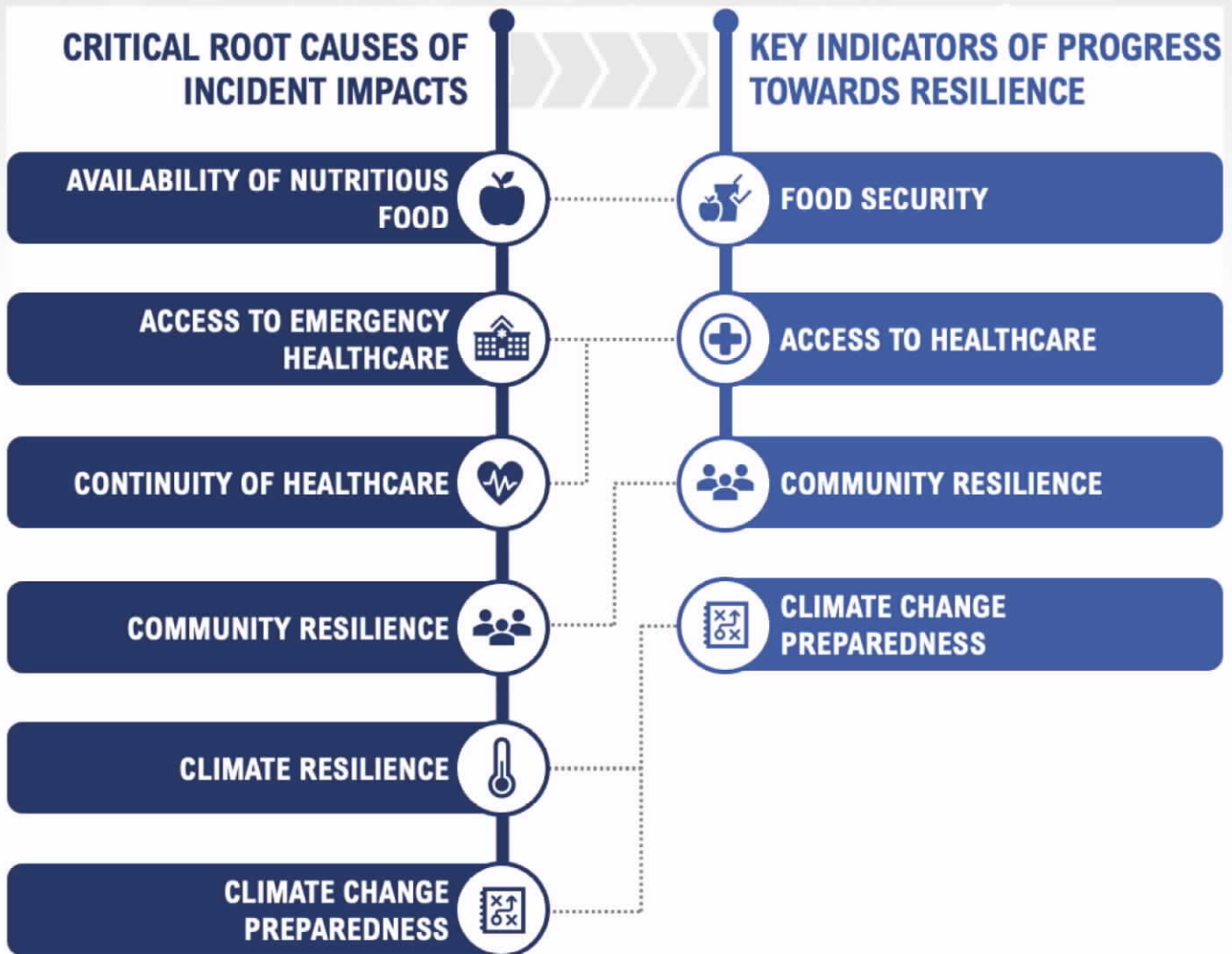
TRAVIS COUNTY GOAL ALIGNMENT

- Promote community resilience in daily living and in times of emergency.
- Promote the well-being of our residents through social, economic, and health and safety initiatives.
- Preserve and protect our environment and natural resources through responsible land stewardship.

Measuring Progress

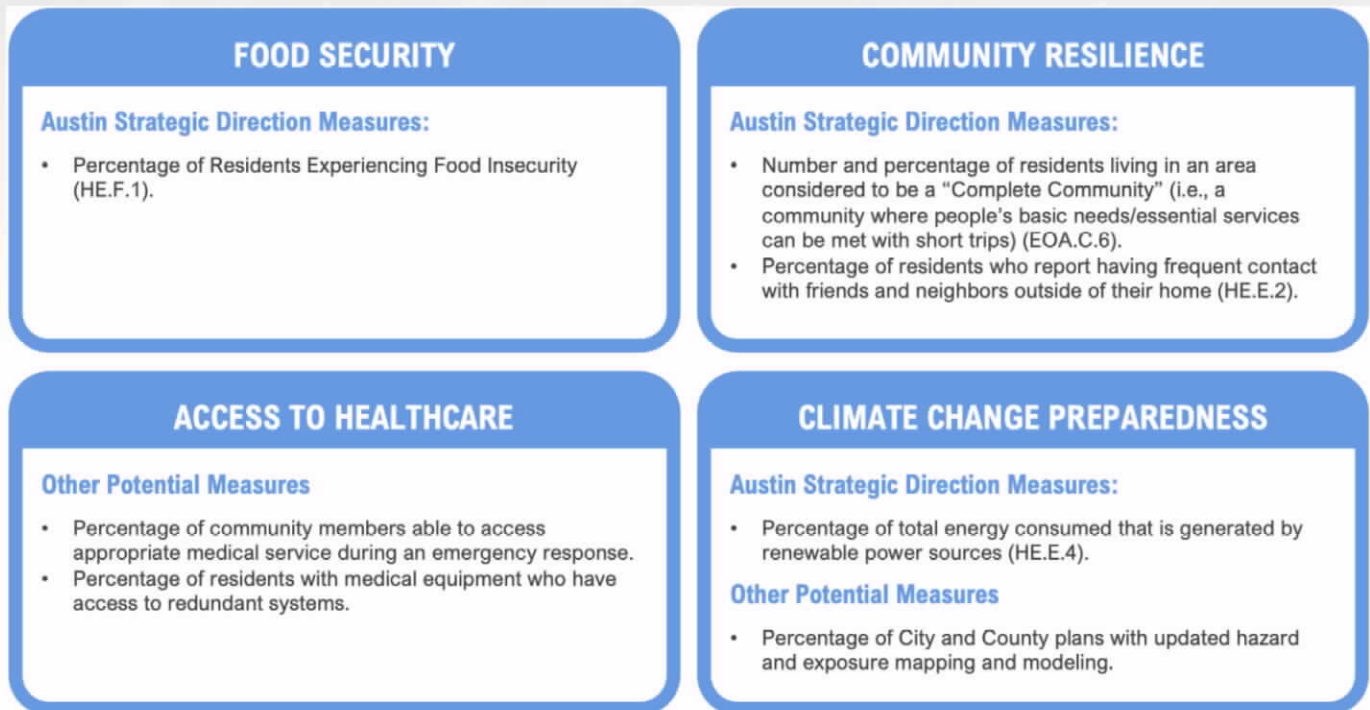
From the incident analysis, critical root causes for this improvement outcome included: availability of nutritious food, access to emergency healthcare, continuity of healthcare, community resilience, climate resilience, and climate change preparedness. Key indicators of progress towards resilience include food security, access to healthcare, community resilience, and climate change preparedness.

Figure 15: Critical Root Causes and Key Indicators of Progress



Progress is measured by considering metrics such as food insecurity, access to medical services, living in communities that meet all resident's needs, and plans annually updating their risk and climate modeling.

Figure 16: Available Metrics for Measuring Progress⁹



Taking Action

The following section outlines the key corrective actions for the City and County's response operation. Key recommendations were selected that best summarized the impacts to the strategic outcome and should be prioritized to make progress most effectively and efficiently towards the strategic outcome.

⁹ City of Austin Strategic Performance Dashboard available here: <https://data.austintexas.gov/stories/s/59fp-raw5>.

Figure 17: Key Recommendations for Improvement

1

Develop a comprehensive shelter feeding plan that accounts for resources at the City, County, and state levels. Include parameters for proper standards for food handling and service to prevent foodborne illness. Integrate this comprehensive feeding plan into the broader mass care planning efforts.

2

Invest in resilient water infrastructure for hospitals and City and County facilities, deemed critical and essential during emergencies. These investments should include installing backup systems, such as water connectors at hospitals and other large facilities fully compatible with the equipment used by local emergency responders.

3

Revise and establish in the City and County a comprehensive and scalable mass care plan, utilizing the FEMA definition of mass care. Implement a sustainable training approach on the plan's contents. This action should include an evaluation of current planning documents, gaps and areas for improvement, and an explicit definition of roles and responsibilities across departments and the community.

4

Revise the shelter plan with pre-identified sites for future disaster responses with an accompanying public information campaign to notify residents of shelter locations in a timely and actionable manner. Integrate this into the revision of mass care planning.

5

Identify locations that can function as medical shelters which have supporting infrastructure for all-hazard events.

IMPROVEMENT OUTCOME 5: FUNCTIONAL GOVERNMENT

AUSTIN STRATEGIC OUTCOME ALIGNMENT

- Government that Works for All (Believing that City government works effectively and collaboratively for all of us; that it is equitable, ethical and innovative).

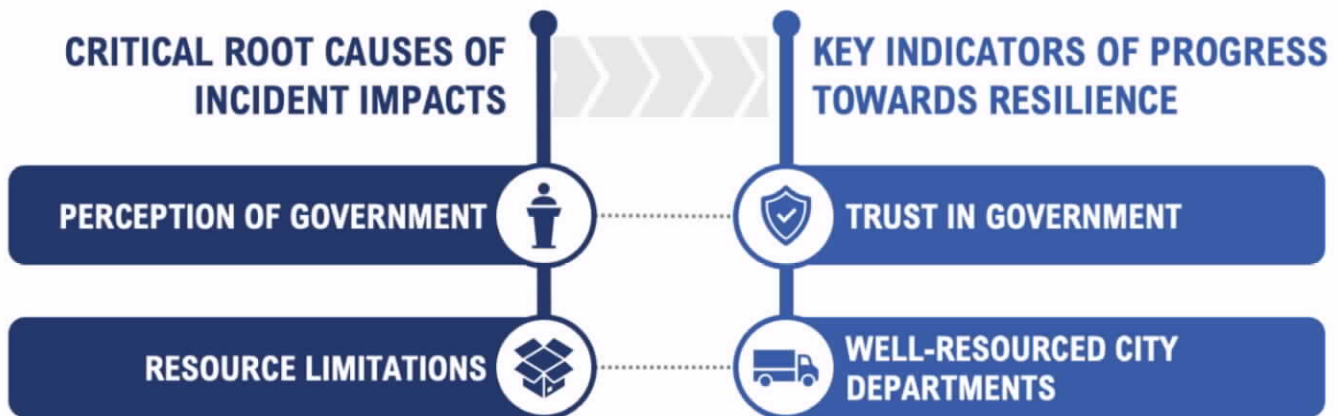
TRAVIS COUNTY GOAL ALIGNMENT

- Empower the public through civic engagement and collaboration.

Measuring Progress

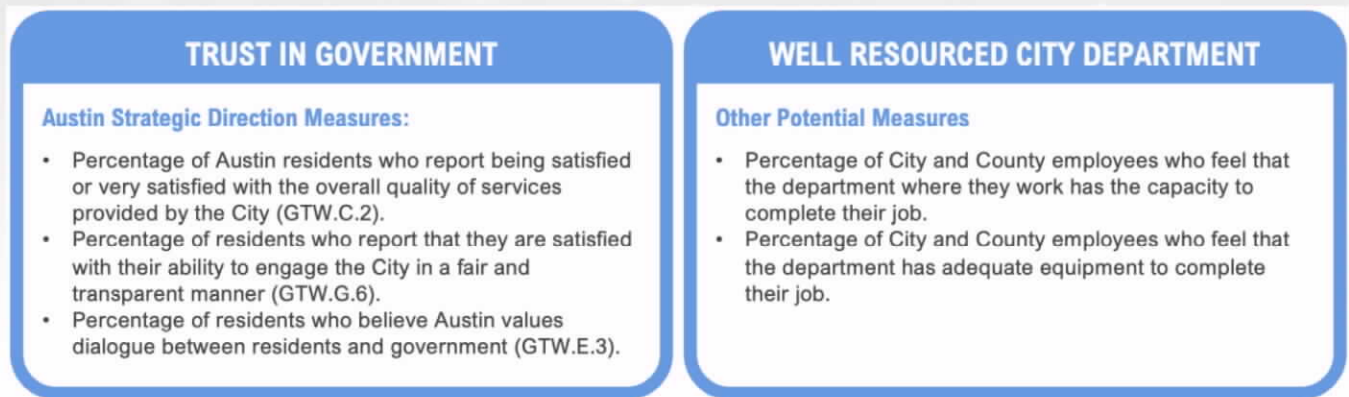
From the incident analysis, critical root causes for this improvement outcome included perception of government and resource limitations. Key indicators of progress towards resilience include trust in government and well-resourced City departments.

Figure 18: Government that Works for All Measures of Progress



Progress is measured by considering metrics such as: the satisfaction of services provided by the City and ability to engage with the City; and availability of resources and equipment to staff.

Figure 19: Available Metrics for Measuring Progress¹⁰



Taking Action

The following section outlines the key corrective actions for the City and County's response operation. Key recommendations were selected that best summarized the impacts to the strategic outcome and should be prioritized to make progress most effectively and efficiently towards the strategic outcome.

¹⁰ City of Austin Strategic Performance Dashboard available here: <https://data.austintexas.gov/stories/s/59fp-raw5>.

Figure 20: Key Recommendations for Improvement

- 1 Codify the role of the Austin Equity Office in EOC operations and emergency operation plans. Review and revise emergency plans and the planning process with input or planning considerations from the Equity Office as well as community-based partners.
- 2 Establish training for elected officials on EOC operations and better define their roles in disaster response operations.
- 3 Evaluate staffing gaps and needs across all City and County departments to include considerations and assumptions for multiple events with cascading and system-wide impacts.
- 4 Invest in and operationalize a GIS mapping technology and an analyst that is available to track metrics such as infrastructure operation and areas of need across multiple responses. Develop a technology team to identify the process, manage, and communicate the system for GIS mapping and other data-related management during disasters.
- 5 Implement communication strategies to increase public awareness of City and County services during disasters. This should incorporate the first 72 hours and 120 hours in a complex disaster with supply chain impacts. Utilize the City of Austin's annual community survey as a means of verification and measurement.

Appendices

Appendix A: Winter Storm Uri Timeline



FEBRUARY 9, 2021

- Austin Public Health Homeless Services Division requests HSEM activate their Cold Weather Sheltering Plan.

FEBRUARY 11, 2021

- Winter Storm Uri begins and temperatures plummet to 32°F.
- 10,000 residents are without power.
- A 26-vehicle pile-up shuts down Highway 45.
- Widespread road closures throughout the City of Austin.
- HSEM activates the Cold Weather Sheltering Plan and opens three shelter locations at recreation centers across the City.

FEBRUARY 13, 2021

- Palmer Events Center opens at 10 a.m. as a warming center.
- CapMetro facilitates the transport of residents to and from Palmer Events Center.
- CapMetro facilitates the evacuation of residents from nursing homes and assisted living facilities to shelters.
- TxDOT uses the break in precipitation to pretreat major roadways.

FEBRUARY 10, 2021

- Austin Water Incident Management Team is placed on standby.
- The City of Austin begins treating roadways, bridges, and sidewalks to prepare for incoming winter weather.

FEBRUARY 12, 2021

- The State of Texas issues Disaster Declaration.
- Sewer systems, operated by Texas Plume Lift Station, overflow, impacting the watershed.
- Governor Greg Abbott meets with meteorologist Joe Bastardi regarding Winter Storm Uri.
- The Austin-Travis County EOC is activated but suffers staffing shortages.

FEBRUARY 14, 2021

- The City of Austin and Travis County declare a State of Emergency.
- Residents anticipate a Boil Water Notice and begin filling bathtubs to stockpile water.
- The Palmer Events Center reaches the reduced capacity per COVID-19 guidelines and expands capacity.
- TxDOT uses social media to urge residents to stay home to keep roads passable for first responders.
- Mobility Austin closes their toll roads.

Appendix A: Winter Storm Uri Timeline



FEBRUARY 15, 2021

- Temperatures of 10°F are recorded in the City of Austin.
- ERCOT narrowly averts a weeks-long, state-wide blackout.
- The number of Austin residents without power grows from 100,000 to 200,000.
- EMS receives four times their average call volume.
- TxDOT crews work to clear overnight snowfall.
- CapMetro suspends service.

FEBRUARY 17, 2021

- A Boil Water Notice is issued for Austin Water's customers in southwest Austin and later to all customers.
- The Austin Water Incident Management Team is activated.
- Northeast High School, a shelter operated by PARD, transfers residents due to loss of power at the facility.
- Overnight precipitation causes roads to re-freeze.
- Widespread road closures and vehicle crashes are reported as a result of icy conditions.
- Two hospitals lose their boiler heater system.
- A national non-profit deploys to Austin and partners with local restaurants to provide food to the community.
- The Crowne Plaza medical shelter is relocated due to utility issues.
- Five Austin Fire Stations are without power.
- The EOC works with Texas Department of Emergency Management (TDEM) to supply 20,000 gallons of diesel fuel to avert system failure at the NXP Semi-Conductor facility.

FEBRUARY 16, 2021

- Temperatures of 6°F are recorded in the City of Austin.
- The Palmer Events Center reaches extended capacity of 500 residents and stops accepting new residents.
- 39% of Austin Energy customers are without power.
- AISD opens shelters and warming centers.
- The Ditmar Recreation Center, a shelter operated by PARD, loses water, causing major sanitation issues.
- Most traffic signals are dark following loss of power.
- TxDOT crews are working 24/7 to treat roads, bridges, and overpasses.
- Operational impacts of the storm on drinking water system begin. The City of Austin experiences a loss of water storage in Southwest B reservoir.
- Residents begin to report a loss of water pressure.

Appendix A: Winter Storm Uri Timeline



FEBRUARY 19, 2021

- Federal Disaster Declaration issued for Winter Storm Uri.
- 23,334 cases of water arrive from FEMA and TDEM.
- MREs are distributed to shelters.
- Regional Medical Coordination group is critically low on platelet sources and begins moving dialysis patients to operational clinics.
- EMS begins experiencing radio communication issues.
- Shower trailers arrive at Palmer Events Center but are unusable due to frozen pipes.
- The Dittmar shelter loses running water and residents are transferred to an alternative location.
- CapMetro coordinates with shelters to transport residents back to their homes.
- 96% of Austin Energy customers have power restored.

FEBRUARY 21, 2021

- State of Emergency lifted in Austin.
- Metro Access delivers 280 cases of water to apartment complexes and makes 61 home deliveries.
- Water storage trends at Austin Water Utilities begins improving.
- Palmer Events Center begins operating as a supplementary water distribution site.
- EOC begins operating water PODs.
- Shelter residents originally at Northeast High School are relocated again to a local church.

FEBRUARY 18, 2021

- Three Austin Police Department stations are without water.
- One million gallons of water purchased from out of state.
- Shelters report locations are running low on potable water.
- 2-1-1 reported 200 calls for food assistance.
- Local restaurants donate and deliver meals to shelters, warming centers, and community centers.
- The City of Austin provides support to local funeral homes to continue operations.
- The City of Austin receives ablution assets (port-o-potties) to support hygiene needs at shelters.
- Area churches begin operating as overnight shelters.
- Social Service workers arrive at Palmer Events Center.
- CapMetro resumes limited transportation services.

FEBRUARY 20, 2021

- Low temperature of 20° F.
- Austin Water implements mandatory water-use restrictions.
- One million gallons of water purchased from out of state arrive.
- 11 water POD sites open across the County.
- Austin receives 34 pallets, 19,584 individual meals, of MREs from FEMA.
- 84 units of MREs delivered to Palmer Events Center.
- 10 EMS stations are without water.
- 17 fire stations are without water, power, or both.
- AISD closes warming center locations.

Appendix A: Winter Storm Uri Timeline



FEBRUARY 23, 2021

- The Boil Water Notice is lifted for the City of Austin and Travis County.

FEBRUARY 25, 2021

- The EOC delivers 10,368 MREs to the Millennium Youth Complex.

MARCH 5, 2021

- The Austin Water Incident Management Team is demobilized.

FEBRUARY 22, 2021

- Temperatures of 76°F are recorded in the City of Austin.
- The Boil Water Notice is rescinded for specific pressure zones.
- The EOC Food Unit is mobilized.
- The Palmer Events Center has 100 residents and begins demobilization.

FEBRUARY 24, 2021

- Emergency water use restrictions are lifted.
- Local restaurants and a non-profit collaborate to donate and distribute 20,000 meals to residents.

FEBRUARY 26, 2021

- The Palmer Events Center has no overnight residents.
- City and County operations shift towards infrastructure damage repair and recovery.
- Austin City Council, Austin Water, and Austin Energy create assistance programs for bill payments, rate reductions, and private plumbing repairs.

MARCH 12, 2021

- A total of 120,000 MREs have been distributed by EOC.
- Local restaurants and non-profits provided 90,000 meals to the community.
- EOC storm demobilization begins, COVID-19 operations are sustained.

APPENDIX B: SURVEY RESPONSE ANALYSIS

The results of the Winter Storm Uri After-Action Review survey are based on 191 responses from individuals representing: 30 City of Austin departments and agencies, 29 Travis County departments and jurisdictions, 14 hospitals, non-profit organizations, utilities, and four State agencies. The total survey responses are labeled “respondents.” Of the total respondents, 65% are City of Austin employees, labeled “Austin respondents.”

TRAINING:



75%

of respondents reported that they lacked overall training relevant to winter weather.



12%

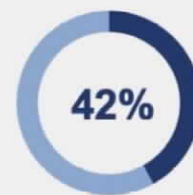
of residents reported participating in relevant training exercises in the past year.

DEPARTMENTAL PREPAREDNESS:



52%

of Austin respondents said their department or organization was not well prepared for Winter Storm Uri.



42%

of respondents said their departments lacked or were unaware if their department had an emergency operational plan for winter weather.

STAFF PREPAREDNESS:

43% percent of respondents, and **45%** of Austin respondents reported that the departments where they worked lacked sufficient tire chains, internet access, food, water, and other resources necessary for them to adequately perform their job functions.

PERSONAL PREPAREDNESS:



33%

of respondents said they felt personally unprepared for Winter Storm Uri.

PERSONAL PREPAREDNESS:

59%

of respondents and

52%

of Austin respondents lacked generator or reserve power for their home.

46%

lacked backup power for their computer or internet.



EXTERNAL AND INTERNAL COMMUNICATION:

43% of respondents, and **45%** of Austin respondents noted that external public communication from elected officials lacked coordination.

33% of respondents and **38%** of Austin respondents reported that communication from departments to field operations was not effective.

STAFFING:

43% of respondents, and **44%** of Austin respondents could not access the Austin/Travis County (A/TC) EOC due to weather conditions at some point during the response.

Of this number, **65%** of respondents and **70%** of Austin respondents were unable to access the EOC for two days or longer.

Of these respondents, **20%** could not access the EOC virtually.

COORDINATION AND COLLABORATION:

33%

noted that the A/TC EOC coordination structures and processes were unclear.

38%

of A/TC EOC personnel did not know each other's roles.

35%

of respondents thought there was not a clear process to coordinate with external EOC partners.

APPENDIX C: FOCUS AREA PRIORITIZATION SCHEMA

Recommendations outlined in this AAR were consolidated into an IP to facilitate implementation and tracking of the individual actions. The IP that accompanies this AAR allows for the assignment of responsibility and leadership and offers a quick reference for action-oriented recommendations intended to improve capability and future response operations.

Recommendations outlined in the IP are identified as high, medium, and low based on ability to implement. Criteria for determining the “ability to implement” include relative cost, anticipated benefits, the estimated Level of Effort (LOE) in staff time, capabilities needed to implement, and the approximate timeframe for completion. More favourable options (e.g., low LOE, low cost, high benefits, existing capabilities) were assigned a higher value, and less favourable options were assigned a lower value. For example, if the estimated LOE is greater than 80 hours, this was seen as less favourable and was assigned a value of “1.” If LOE was estimated to be less than 40 hours, it was given a value of “3”.

Ranking values were then added together for a total score. The ability to implement was ranked high, medium, and low based on this total score using the following scheme:

- High: 15-18
- Medium: 11-14
- Low: 7-10

Recommendations outlined in the IP are also provided a target completion. This ranking is determined using the following scheme:

- Immediate-term (within four months)
- Short-term (within six to eight months)
- Medium-term (within 18 months)
- Long-term (within three years)

APPENDIX D: IMPROVEMENT PLAN

Table 1: Improvement Plan

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
1	Establish a process to better incorporate food access and information on mass care services for the public to the Public Information Officer (PIO) and Joint Information Center (JIC). For example, identify a direct contact to provide information across departments and the Emergency Operations Center (EOC).	Food	Communication and Coordination	Medium	Short-term	City of Austin (COA) Homeland Security & Emergency Management (HSEM), Travis County Office of Emergency Management (TCOEM)	Austin Public Health (APH), COA Sustainability Office, Central Texas VOAD (mass care partners with PIOs)
2	Incorporate solutions on access to transportation for vulnerable populations in planning, preparedness, and response. These solutions should provide access to life-sustaining goods and services during emergencies.	Food	Equipment and Infrastructure	Low	Short-term	HSEM, TCOEM	Austin Public Health (APH), CapMetro, COA Fleet Mobility Services, Austin Transportation Dept (ATD), Travis County Transportation and Natural Resources (TNR)
3	Include considerations for cascading impacts that impact supply chains in planning, preparedness, and operations. This should include utilization, collaboration, and coordination of community groups and the private sector.	Food	Logistics and Supply Chain Management	Low	Long-term	HSEM, TCOEM, Office of Sustainability	NGOs, Private Sector Agencies

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
4	Develop practical solutions for stockpiling or accessing enough shelf-stable meals and water for 72-hours for targeted distribution. Coordinate pre-staging efforts with organizations best positioned to aid communities most in need. This initiative must include provisions for sufficient funding and restocking. In addition, invest in a variety of shelf-stable meals that meet many considerations, including dietary needs (e.g., low sodium) or cultural sensitivity, if deemed financially or logistically practical.	Food	Logistics and Supply Chain Management	Low	Long-term	HSEM, TCOEM, Office of Sustainability	APH, Travis County Health & Human Services (TCHHS), Non-governmental Organizations (NGOs)
5	Revise the Emergency Operation Plan (EOP) and other disaster planning documents with planning considerations for non-profits, the private sector, and other relevant community-based service delivery organizations.	Food	Planning and Preparedness	Low	Long-term	HSEM, TCOEM	All City and County Departments
6	Consolidate food access areas within the EOC into a cohesive branch or task force during future disaster response operations.	Food	Operations and Response	Medium	Short-term	HSEM, TCOEM	APH, TCHHS, Office of Sustainability
7	Integrate a Food Access Leadership Team or equivalent stakeholder group in planning and preparedness activities. Utilize this group in identifying appropriate tactics for addressing community needs.	Food	Planning and Preparedness	Low	Long-term	Office of Sustainability, APH	HSEM, TCOEM, TCHHS

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
8	Integrate innovative policy solutions as part of the approach to providing emergency services (e.g., direct cash transfers to increase access to food when supply lines are functioning).	Food	Planning and Preparedness	Low	Medium-term	COA Equity Office	Finance, Purchasing
9	Develop a comprehensive operational disaster feeding plan that includes activation triggers, staffing and leadership roles of private and public sectors, school districts, contractors, vendors for feeding strategies, timelines, staging, and community-based partners, for example, the Central Texas Food Bank.	Food	Planning and Preparedness	Low	Short-term	HSEM, TCOEM	APH, TCHHS, Office of Sustainability
10	Identify and incorporate County and City food policy representatives (e.g., City Food Policy Manager or other representative) into all disaster response and preparedness operations, specifically the EOC command structure.	Food	Staffing	Medium	Short-term	HSEM, TCOEM	APH, TCHHS, Office of Sustainability
11	Implement communication strategies to increase public awareness of City and County services during disasters. This should incorporate the first 72-hours and 120-hours in a complex disaster with supply chain impacts. Utilize the City of Austin's annual community survey as a means of verification and measurement.	Leadership and Coordination	Communication and Coordination	High	Short-term	HSEM PIO	COA Communications & Public Information Office (CPIO)
12	Require an equitable approach to communications planning, such as activities or tactics that provide	Leadership and Coordination	Communication and Coordination	Medium	Short-term	APH, Austin Equity Office, CPIO	HSEM, TCOEM

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	accessible information on available services to vulnerable populations. In conjunction with this policy, define vulnerable populations.						
13	Implement a communications plan or policy that defines the roles of City Council, Mayor, and County elected officials in an emergency and disaster preparedness and response.	Leadership and Coordination	Communication and Coordination	Medium	Short-term	HSEM, City and County Intergovernmental Relations Office (IGRO), TCOEM	CPIO, COA City Manager's Office (CMO)
14	Evaluate staffing for language translation services during a disaster or emergency. Alter existing plans or contracts to provide language services during a disaster with system-wide impacts.	Leadership and Coordination	Communication and Coordination	Medium	Short-term	Communications & Public Information	HSEM, COA Equity Office
15	Identify a baseline indicator and increase to this level the number of registrants for the Warn Central Texas regional emergency notification system.	Leadership and Coordination	Communication and Coordination	Medium	Short-term	HSEM PIO	Capital Area Council of Governments (CAPCOG), TCOEM
16	Identify practical solutions to increase accessible and uniform communication, or "messaging," across multiple communication channels, for example, social media, legacy media, flyers, and emergency alerts.	Leadership and Coordination	Communication and Coordination	Low	Long-term	HSEM PIO	Central Texas VOAD
17	Continue to implement public messaging that includes health and safety considerations for residents in multiple event scenarios, for example, storm, wildfire, and pandemic response.	Leadership and Coordination	Communication and Coordination	Low	Medium-term	HSEM PIO	CPIO, APH

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
18	Identify actions to improve the monitoring of social media and other communication channels to identify and respond to unmet needs during a disaster.	Leadership and Coordination	Communication and Coordination	Medium	Short-term	HSEM, TCOEM	CPIO
19	Invest in and operationalize a comprehensive approach to data analytics and visualization across all response areas. This should include GIS mapping technology and an analyst that is available to track metrics such as infrastructure operation and areas of need across multiple responses. Develop a technology team to identify the process, manage, and communicate the system for GIS mapping and other data-related management during disasters.	Leadership and Coordination	Equipment and Infrastructure	Medium	Medium-term	COA Communications & Technology Management (CTM), Travis County Information & Technology Services (ITS)	HSEM, TCOEM
20	Identify gaps in data sharing between City and County departments to assist in coordinating and managing requests for resources and services. Utilize this data to avoid duplication of efforts while targeting and supporting the communities and residents most in need.	Leadership and Coordination	Equipment and Infrastructure	Low	Long-term	CTM, ITS	ITS, CTM, Austin Equity Office
21	Evaluate refinements in remote work technology, such as Microsoft Teams, that improve the efficiency of outputs and coordination during major disaster response operations. Identify, test, and exercise these tools under multiple scenarios for the purpose of continual improvement.	Leadership and Coordination	Equipment and Infrastructure	Low	Long-term	CTM, ITS	All City and County Departments

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
22	Identify and address gaps in equipment and resources for emergency response operations during winter weather events. Train personnel on the use of this equipment, accounting for a lack of experience in utilizing equipment during winter weather.	Leadership and Coordination	Equipment and Infrastructure	Medium	Medium-term	HSEM, TCOEM	All City and County Departments
23	Assign essential personnel FirstNet-powered cell phones to communicate with during disaster response.	Leadership and Coordination	Equipment and Infrastructure	Medium	Medium-term	CTM	ITS
24	Identify generator needs to support critical infrastructure (i.e., essential buildings, services, fire stations, and 3-1-1 facilities), resource maintenance of this capacity, and require departments to certify operability of these back-up systems. Identify non-profit and community partners who do not have back-up power, encourage installation of alternative power sources. Factor back up power capabilities of non-profits in planning.	Leadership and Coordination	Equipment and Infrastructure	Low	Medium-term	Building Services, FMD, CTM	Office of Sustainability; COA Resiliency Office
25	Identify a process for integrating and prioritizing resource requests within WebEOC or an alternative platform. For example, consider evaluating software tracking options for resource requests, and test given proper use cases.	Leadership and Coordination	Logistics and Supply Chain Management	Medium	Immediate-term	HSEM, TCOEM	CTM, ITS
26	Utilize an equity lens in the distribution of water, food, and wrap-around services. Additional considerations for older	Leadership and Coordination	Logistics and Supply Chain Management	Medium	Medium-term	HSEM, TCOEM	Equity Office, APH, TCHHS

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	adults, residents with access and functional needs, and residents without access to transportation should be taken into account when providing services.						
27	Implement and fund current proposals for a more robust warehousing facility, capabilities, and capacity, including revised staffing, stocking, and training.	Leadership and Coordination	Logistics and Supply Chain Management	Low	Long-term	HSEM, TCOEM	CMO
28	Evaluate the cost-benefits of a more distributed system that would allow staging of resources at smaller hubs in strategic areas throughout the City and County. For example, pre-staging resources may reduce reliance on hazardous roads and bridges and reduce distribution time for goods and services.	Leadership and Coordination	Logistics and Supply Chain Management	Medium	Short-term	HSEM, TCOEM	COA Resiliency Office
29	Evaluate and strengthen the electronic system (with a paper backup option) for disaster requisition, addressing receipt and review of the request, delivery information, a standardized description of products /services, approver info, procurement method, and bill of lading.	Leadership and Coordination	Logistics and Supply Chain Management	Medium	Medium-term	HSEM, TCOEM	COA Finance, TC Auditors Office
30	Evaluate contingency planning with the State of Texas, including dedicated resources for the City or County that is accessible during an event with widespread system impacts. For example, the State of Texas pre-positioned assets in Seguin and Dallas-Ft. Worth but could not promptly fulfill resource requests due to challenging	Leadership and Coordination	Logistics and Supply Chain Management	Low	Medium-term	HSEM, TCOEM	TDEM

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	road conditions and competing requests. Consider relocating these resources within the City of Austin or Travis County.						
31	Identify and implement best practices for coordinating, integrating, and utilizing community-based organizations in emergency response operations, including consideration of workshops, training, and exercises.	Leadership and Coordination	Operations and Response	Low	Medium-term	HSEM, TCOEM	APH, Equity Office, TCHHS
32	Enhance coordination between the City and non-governmental organizations on relief site management transitions and volunteer management.	Leadership and Coordination	Operations and Response	Low	Long-term	HSEM	APH
33	Develop clear guidance and communication for community-based and non-governmental organizations active in disaster response regarding cost recovery. Provide financial and cost recovery training or information by partnering with local and state Central Texas VOAD to educate all community-based organizations active in disaster response and recovery.	Leadership and Coordination	Operations and Response	Low	Long-term	HSEM, CMO	APH, Office of Sustainability
34	Codify roles and responsibilities as practical during emergencies between the City, County, and community-based organizations and private companies in writing through memorandum of understandings (MOU) or equivalent documentation or process. Include defined activation triggers, key	Leadership and Coordination	Logistics and Supply Chain Management	Low	Long-term	HSEM, TCOEM	COA CMO, COA Law, TC Law

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	performance indicators, and means of coordination and resourcing.						
35	Develop or revise the policy for receiving and distributing donations that match the needs of residents. Implement a public information initiative to widely understand the process for receiving and distributing donations by the whole community, including response agencies and organizations.	Leadership and Coordination	Logistics and Supply Chain Management	Low	Long-term	HSEM, TCOEM	COA CMO, COA Law, TC Law
36	Revise winter weather planning and preparedness activities to incorporate activation decisions with timebound triggers (e.g., linking EOC activation and mobilization to a specific hour). Disseminate activation triggers across all relevant City and County departments and their leadership. Communicate activation status according to plans.	Leadership and Coordination	Operations and Response	Low	Medium-term	HSEM, TCOEM	All City and County Departments
37	Develop or disseminate a Standard Operating Procedure (SOP) for activating the necessary branches, including criteria to determine when a branch should be activated.	Leadership and Coordination	Operations and Response	Medium	Short-term	HSEM, TCOEM	All City and County Departments
38	Distribute daily Incident Action Plans (IAPs) and Situation Reports (SitReps) to departments and partner organizations, including elected officials. Acknowledge and address additional shortcomings in situational awareness and implement command decisions and coordination	Leadership and Coordination	Operations and Response	Medium	Short-term	HSEM, TCOEM	All City and County Departments

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	across departments that address these shortcomings.						
39	Conduct an analysis of City and County policies that may hinder operations across jurisdictional boundaries and implement a unified approach that removes obstacles to collaboration and mutual support.	Leadership and Coordination	Operations and Response	Low	Long-term	COA CMO, City of Austin and Travis County Elected Officials	HSEM, TCEOCM
40	Create an accessible list for approved emergency response purchases eligible for reimbursement and make this resource available to non-profits and community groups.	Leadership and Coordination	Operations and Response	Low	Long-term	HSEM, TCOEM	COA Finance, TC Auditors Office, COA Law
41	Evaluate and identify the range of City and County emergency and disaster response support services from equivalent jurisdictions and the viewpoints of subject matter experts. Develop a list of support goods and services from this analysis and identify sustainable funding or partner resources for their implementation. The purpose of this action is to bring Austin and Travis County services in line with equivalent jurisdictions.	Leadership and Coordination	Operations and Response	Low	Long-term	HSEM, TCOEM	CAPCOG
42	Establish an improved Incident Command Structure (ICS) that requires safety officers from across the City of Austin and Travis County. Formalize their inclusion and engagement in a SOP. In addition, conduct a safety audit with a defined scope and actionable	Leadership and Coordination	Operations and Response	Medium	Medium-term	HSEM	COA Human Resources Department (HRD), Travis County Human Resources Management

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	recommendations (e.g., traffic management, operation of heavy machinery and vehicles). Incorporate this revision in an SOP with strong adoption by senior leadership and response personnel.						Department (HRMD)
43	Identify programs, resources, and approaches to improve or encourage whole community resilience and risk reduction prior to, during, and following disasters. These efforts should include all sectors of the community, including businesses and non-profits.	Leadership and Coordination	Personal Preparation	Low	Long-term	HSEM, TCOEM	TDEM,
44	Emphasize strategies for personal preparedness and resilience and further foster social connections with neighbors and neighborhoods to increase self-reliance. These strategies should provide clear expectations and be inclusive of a whole community approach. For example, residents should be provided guidance on the number of days adequate for maintaining a supply of food and water in the event of a disaster or emergency.	Leadership and Coordination	Personal Preparation	Medium	Medium-term	HSEM, TCOEM	CPIO
45	Evaluate, develop, and implement a policy that requires the provision of the equitable availability and distribution of goods and services in a disaster with system-wide impacts. This policy should align with the definition of "equity", -- or its equivalent policy or definition -- as adopted by the City and County.	Leadership and Coordination	Personal Preparation	Medium	Medium-term	Austin Equity Office	HSEM, TCOEM, COA Law, TC Law

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
46	Identify and implement evidence-based or best practice programs for personal preparedness in supporting City and County staff to fulfill job functions.	Leadership and Coordination	Personal Preparation	Medium	Medium-term	HSEM, TCOEM	All City and County Departments
47	Identify actions that incentivize staff members to ensure their families are prepared for disasters without them, including utilizing the Federal Emergency Management Agency (FEMA) Ready Responder Toolkit guidance and resources.	Leadership and Coordination	Personal Preparation	Low	Medium-term	HSEM, TCOEM	HRD, HRMD, CMO, TC Executive Staff
48	Include considerations for extreme winter storms and freezing in climate change hazard and threat assessments in planning and preparedness. Evaluate and revise relevant plans to anticipate a complex, multi-hazard event. Revise planning assumptions to always account for multiple-hazard events with cascading impacts and infrastructure failure. Establish a clear and transparent expectation of service delivery during such scenarios.	Leadership and Coordination	Planning and Preparedness	Low	Long-term	HSEM, TCOEM	COA Resiliency Office
49	Revise risk considerations to create more resilient systems that are able to be sustained during cascading impacts, such as an ongoing pandemic and storm with state-wide effects.	Leadership and Coordination	Planning and Preparedness	Low	Medium-term	HSEM, TCOEM	COA CMO, TC Executive Staff
50	Continue to review departmental planning so that agencies adhere to	Leadership and Coordination	Planning and Preparedness	Low	Medium-term	HSEM, TCOEM	COA CMO, TC Executive Staff

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	deadlines for updating COOP and other emergency planning documents.						
51	Address gaps in staff comprehension of planning documents by developing accessible training material and writing plans for a general audience rather than emergency managers.	Leadership and Coordination	Planning and Preparedness	Low	Long-term	HSEM, TCOEM	CTM, ITS, HRD
52	Develop a training or conduct an annual exercise for all City and County departments, community partners, and elected officials on relevant planning documents such as the EOP.	Leadership and Coordination	Planning and Preparedness	Medium	Medium-term	HSEM, TCOEM	TDEM, APH
53	Create a catalog of plans that are secure but accessible to necessary City and County staff.	Leadership and Coordination	Planning and Preparedness	Low	Long-term	HSEM, TCOEM	CTM, ITS, HRD, HRMD
54	Codify the role of the Austin Equity Office in EOC operations and EOPs. Review and revise emergency plans and the planning process with input or planning considerations from the Equity Office as well as community-based partners.	Leadership and Coordination	Planning and Preparedness	Medium	Immediate-term	Austin Equity Office. Resiliency Office	HSEM, TCOEM
55	Commission an analysis to evaluate appropriate HSEM and TCOEM staffing levels to respond to disasters of increased frequency, intensity, and complexity. This analysis should take into consideration current and anticipated agency assignments and responsibilities.	Leadership and Coordination	Staffing	Low	Medium-term	COA CMO, Travis County Executive Staff, City of Austin and Travis County Elected Officials	HSEM, TCOEM, APH, HRD, HRMD

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
56	Revise and resource HSEM and TCOEM staffing levels and organization based on the analysis. This should include considerations and assumptions for multiple events with cascading and system-wide impacts.	Leadership and Coordination	Staffing	Low	Short-term	COA CMO, Travis County Executive Staff, City of Austin and Travis County Elected Officials	HSEM, TCOEM, APH
57	Continue to resource alternative staffing schemes, such as a reserve team or stand-by roster of qualified public health and emergency management professionals who are sufficiently trained for rapid and effective deployment.	Leadership and Coordination	Staffing	Medium	Immediate-term	HSEM, TCOEM	COA HRD, TC HRMD
58	Develop a staffing plan that includes SOPs for notifying non-governmental and other organizations of the anticipated need for volunteers.	Leadership and Coordination	Staffing	Low	Short-term	HSEM, TCOEM	Central Texas VOAD, Community Partners
59	Require mandatory training of City and County staff in disaster response operations. Integrate this recommendation in the revised staffing policies.	Leadership and Coordination	Training and Exercises	Low	Short-term	HSEM, TCOEM	COA HRD, TC HRMD
60	Evaluate improvements in redundant systems for remote working in City and County COOP planning, such as an alternative location or backup power for employees designated as essential.	Leadership and Coordination	Staffing	Medium	Medium-term	HSEM, TCOEM	CTM, ITS, COA HRD, TC HRMD, All City and County Departments
61	Develop an EOC orientation process to support the onboarding and transition of EOC representatives between shifts.	Leadership and Coordination	Training and Exercises	Medium	Medium-term	HSEM, TCOEM	COA HRD, TC HRMD

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
62	Provide training for elected officials on EOC operations and explicitly define their roles in disaster response operations.	Leadership and Coordination	Training and Exercises	Medium	Short-term	HSEM, TCOEM	CMO, TC Executive Staff, City of Austin and Travis County Elected Officials
63	Strengthen the EOC liaison officer's capability to support and coordinate with Austin City Council and County officials during emergencies.	Leadership and Coordination	Training and Exercises	High	Immediate-term	HSEM, TCOEM	CMO, City of Austin and Travis County Elected Officials
64	Evaluate the effectiveness of existing 3-1-1 scripting and adjust for both daily and emergency calls, especially as it relates to the requests that need to go to departments during emergencies. Develop training for Austin 3-1-1 staff on responding to common disaster requests.	Leadership and Coordination	Training and Exercises	Medium	Medium-term	HSEM PIO, CPIO, Austin Energy, Austin Water	APH
65	Develop and implement a communications plan for the medical shelter operation to relieve strain on hospitals, and direct residents to the appropriate shelter facility.	Medical	Communication and Coordination	Medium	Long-term	APH PIO	CATRAC, ATCEMS, Office of the Chief Medical Officer (OCMO)
66	Strengthen relationships with dialysis centers, educate centers on available ATCEMS resources, and include CapMetro and CATRAC in planning to accommodate patients' transportation needs.	Medical	Equipment and Infrastructure	Low	Medium-term	CATRAC, APH	ATCEMS, TC ESDs, CapMetro, OCMO

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
67	Identify locations that can function as medical shelters which have supporting infrastructure for all-hazard events.	Medical	Equipment and Infrastructure	Medium	Short-term	APH	CATRAC, ATCEMS, HSEM, TCOEM
68	Invest in durable and practical solutions for stockpiling winter supplies (e.g., slick-on rubber cleats, hand warmers) for EMS staff, vehicles, and patient care. Identify and implement a plan for their upkeep and maintenance.	Medical	Equipment and Infrastructure	Medium	Medium-term	ATCEMS	N/A
69	Configure vehicles with functional technology such as vehicle tracking with AVC/GPS, Mobile Data Computers (MDC), radios, or tablets to allow departments and community-based partners to participate in response operations.	Medical	Equipment and Infrastructure	Low	Long-term	ITS, CTM, COA Fleet Mobility Services, TCSO	ATCEMS, APD, AFD, TNR Fleet Services
70	Establish agreements with medical oxygen supply companies to coordinate disaster preparations for people who use medical oxygen and include considerations for those with functional needs in mass care shelter planning.	Medical	Logistics and Supply Chain Management	Medium	Medium-term	APH, TCHHS, CATRAC	ATCEMS, AFD, Purchasing, TC Law, COA Law
71	Develop a plan to pre-position vital resources for hospitals in accessible locations throughout the community in inclement weather and poor road conditions, and include maintenance of the resources as part of the plan. Develop agreements among area hospitals to share pre-positioned supplies and restock as needed.	Medical	Logistics and Supply Chain Management	Medium	Medium-term	APH, TCHHS, CATRAC	HSEM, TCOEM

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
72	Review and revise the SOP to activate the Medical Operations Command (MOC) and identify an authority to determine when notification and activation are required.	Medical	Operations and Response	Medium	Medium-term	CATRAC, APH, TCHHS	ATCEMS, OCMO
73	Continue to integrate long-term care facilities, nursing homes, hospice, and service providers for medical oxygen, dialysis, mental health, and pharmacy service into the regional healthcare disaster planning coalition.	Medical	Operations and Response	Low	Long-term	CATRAC, APH, TCHHS	ATCEMS
74	Develop early identification plans for winter weather that allow hospitals a more substantial window of time to pre-stock essential resources.	Medical	Planning and Preparedness	Medium	Medium-term	HSEM, TCOEM	CATRAC
75	Review and refine the 9-1-1 EMS Response Modification plan to better align the priorities of medical calls between AFD, ATCEMS, and the Office of the Chief Medical Director.	Medical	Planning and Preparedness	Medium	Medium-term	OCMO	ATCEMS, AFD, TC ESD Dispatch, CTM, ITS
76	Include considerations for the treatment of drug dependencies in a shelter setting and ensure proper resources and services in the event of system failures.	Medical	Planning and Preparedness	Medium	Medium-term	ATCEMS, OCMO	APH, TCHHS
77	Increase outreach to homeless encampments to increase the number of registrants in the emergency notification system. Execute this outreach according to a baseline indicator that enables measurement of results.	Shelter	Communication and Coordination	Low	Long-term	APH	NGOs, HSEM PIO

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
78	Educate community-based organizations on the system for requesting and coordinating resources. Additionally, designate a point of contact for community-based organizations to submit resource requests during a future disaster or emergency.	Shelter	Logistics and Supply Chain Management	Medium	Medium-term	HSEM, TCOEM	Central Texas VOAD, NGOs, Equity Office
79	Identify Mission Ready Packages and stand-by services or contracts inclusive of components for operations during the initial 120-hour response period. Mission Ready Packages should include essential services and resources, showers, access to food, feeding supplies, and water.	Shelter	Logistics and Supply Chain Management	Medium	Short-term	Austin Parks and Recreation Department (PARD), Purchasing, HSEM	TCOEM, APH, Building Services,
80	Evaluate pre-positioning resources at shelter locations or strategic locations throughout the City and County in the event of a disaster. For example, develop kits that include feeding supplies, medical supplies, pre-printed signage, registration sheets, and other critical records. Identify procurement and distribution mechanisms that allow for the just-in-time purchase of goods within acceptable limits.	Shelter	Logistics and Supply Chain Management	Low	Long-term	PARD, Purchasing, HSEM, TCOEM	APH, Austin Disaster Relief Network (ADRN), Red Cross
81	Identify alternative purchasing and procurement requirements to address feeding needs that remain unmet or if a pre-event contract is not established for feeding vendors. Develop and implement activation triggers as part of a revision to sheltering and mass care planning that	Shelter	Logistics and Supply Chain Management	Medium	Short-term	Purchasing, HSEM, TCOEM	Office of Sustainability, APH, PARD

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	allows for the timely procurement of food.						
82	Incorporate and include the network of organizations and agencies that provide services for persons experiencing homelessness (e.g., groups focused on advocacy and providing wrap-around services) in disaster sheltering planning and operations.	Shelter	Operations and Response	Low	Medium-term	APH	TCHHS, HSEM
83	Revise and establish in the City and County a comprehensive and scalable mass care plan, utilizing the FEMA definition of mass care. Implement a sustainable training approach on the plan's contents. This action should include an evaluation of current planning documents, gaps and areas for improvement, and an explicit definition of roles and responsibilities across departments and the community.	Shelter	Planning and Preparedness	Low	Long-term	APH, TCHHS, HSEM, TCOEM	Equity Office, Central Texas VOAD, NGOs
84	Revise and resource HSEM and TCOEM staffing levels and organization based on the above analysis. This should include considerations and assumptions for multiple events with cascading and system-wide impacts.	Leadership and Coordination	Planning and Preparedness	Medium	Long-term	HSEM, TCOEM	COA HRD, TC HRMD and All City and County Departments
85	Define explicitly the roles of City and County departments and that of community-based groups in addressing sheltering for vulnerable populations during emergency events.	Shelter	Operations and Response	Medium	Medium-term	HSEM, TCOEM	APH, TCHHS, Equity Office

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
86	Create a sheltering task force or branch within the EOC as part of a more comprehensive and coordinated approach to mass care planning and operations. In addition, review and establish the delineation of roles and responsibilities between departments in sheltering persons experiencing homelessness. Include clarifications in all pertinent plans related to mass care and social services.	Shelter	Operations and Response	Low	Long-term	HSEM, TCOEM	APH, PARD, TCHHS
87	Identify a list of shelters with durable infrastructure, including heating, ventilation, and air conditioning (HVAC), spaces to accommodate large groups, backup power, and water.	Shelter	Planning and Preparedness	Medium	Medium-term	HSEM, TCOEM	Building Services, Office of Real Estate Services, APH, Equity Office, ADRN, Red Cross, Office of Sustainability
88	Revise the shelter plan with pre-identified sites for future disaster responses with an accompanying public information campaign to notify residents of shelter locations in a timely and actionable manner. Integrate this into the revision of mass care planning.	Shelter	Planning and Preparedness	Medium	Medium-term	HSEM, TCOEM	APH, Equity Office, ADRN, Red Cross, Office of Sustainability
89	Include and address the role of law enforcement, mental and behavioral health services, and the departments responsible for these services in mass care and social services planning and provisions for shelter residents. Adequately fund and staff their activities.	Shelter	Planning and Preparedness	Low	Long-term	APD, Integral Care, EMCOT/MCOT,	APH, TCHHS, TCSO. COA Equity Office

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
90	Include specific and comprehensive provision on sheltering within the revised approach to mass care planning, including minimum standards in infrastructure, services, and roles and responsibilities.	Shelter	Planning and Preparedness	Low	Long-term	HSEM, TCOEM	AISD, PARD, Austin Convention Center, Red Cross, ADRN, Central Texas VOAD
91	Disseminate the shelter and warming center rules and expectations to all shelter residents. These rules should be incorporated in accessible field operational guides for administering shelter operations.	Shelter	Planning and Preparedness	Medium	Medium-term	HSEM, TCOEM	PARD, Red Cross, ADRN, ISDs
92	Develop a congregate sheltering plan that includes COVID-19 recommendations for reduced capacity. Identify and coordinate alternative shelter locations as part of planning efforts to identify durable shelter locations.	Shelter	Planning and Preparedness	Medium	Short-term	APH, HSEM, TCOEM	Red Cross, ADRN, PARD
93	Develop a comprehensive shelter feeding plan that accounts for resources at the City, County, and State levels. Include parameters for proper standards for food handling and service to prevent foodborne illness. Integrate this comprehensive feeding plan into the broader mass care planning efforts.	Shelter	Planning and Preparedness	Medium	Medium-term	APH, HSEM, TCOEM	Office of Sustainability, PARD
94	Develop an encampment disaster outreach plan to better integrate services for persons experiencing homelessness in disaster response operations and reduce the burden on departments with	Shelter	Planning and Preparedness	Medium	Short-term	APH, HSD, TCHHS	ATCEMS, NGOs

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	insufficient capacity or mandate to care for persons experiencing homelessness.						
95	Develop law enforcement staffing plans for sheltering operations to maintain clear roles, responsibilities, and expectations. In addition, establish clear guidelines with law enforcement regarding shelter policies, so all residents seeking access to life-sustaining services feel safe to do so.	Shelter	Staffing	Medium	Short-term	APD, TCSO	APH, PARD, HSEM, TCOEM, Equity Office
96	Invest in regular engagement and training of identified shelter managers.	Shelter	Staffing	Medium	Short-term	HSEM, TCOEM	All City and County Departments, NGOs, ISDs
97	Create a scalable contingency plan for delivering shelter and mass care services if volunteers are unavailable, including pre-vetting and leveraging other community partners qualified to provide disaster mass care operations and shelter services.	Shelter	Staffing	Low	Long-term	HSEM, TCOEM	All City and County Departments, NGOs, ISDs
98	Develop and implement shelter training for City and County staff. In addition, establish shelter position checklists and an on-boarding process for shelter workers and volunteers.	Shelter	Training and Exercises	Medium	Long-term	HSEM, TCOEM	APH, TCHHS
99	Develop and train a reliable pool of volunteers from the public, City staff, and non-governmental organizations to staff shelters during disasters.	Shelter	Training and Exercises	Low	Long-term	HSEM, TCOEM, HRD, TC HRMD	COA CMO, City of Austin and Travis County Elected

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							Officials, Central Texas VOAD
100	Identify cost-effective solutions for upgrading the public safety vehicle fleet to be able to function in various weather events. This should include considerations for purchasing all-wheel drive vehicles.	Transportation	Equipment and Infrastructure	Low	Long-term	ATCEMS, APD, AFD, TCSO,	TNR, COA Fleet Mobility Services
101	Evaluate the government's inventory of snow and ice removal materials in the Austin-Travis County area, and implement a plan for their upgrade based on revised assumptions of multiple hazard events with system wide impacts.	Transportation	Equipment and Infrastructure	Low	Medium-term	COA Public Works, Austin Transportation Dept (ATD), TNR	TxDOT
102	Develop a transportation plan with an up-to-date list of community assets and support vehicles that could be utilized to augment City and County assets during response operations.	Transportation	Equipment and Infrastructure	Medium	Medium-term	CapMetro, COA Fleet Mobility Services, COA Transportation Department, TNR	HSEM, TCOEM
103	Identify resources and partnerships that can supplement law enforcement agencies to monitor ice accumulation on critical roadways during future disasters or emergencies.	Transportation	Logistics and Supply Chain Management	Medium	Short-term	HSEM, TCOEM	APD, TCSO, ATD, Public Works, TNR
104	Develop a coordinated system for emergency transportation requests, and train 9-1-1 dispatch on the procedure for transferring requests to the appropriate department or agency.	Transportation	Operations and Response	Medium	Short-term	ATCEMS, APD, AFD, TCSO	TC ESDs

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
105	Establish and document a process for requesting CapMetro resources during EOC activation and other scenarios.	Transportation	Operations and Response	Low	Medium-term	CapMetro	HSEM, TCOEM
106	Update emergency points of contact for agencies engaged with the EOC every quarter.	Transportation	Operations and Response	Low	Medium-term	HSEM, TCOEM	All City and County Departments, Central Texas VOAD
107	Disseminate the tier system used by TxDOT to the City of Austin and Travis County's transportation, law enforcement, and emergency management stakeholders to maintain common terminology and operating picture.	Transportation	Planning and Preparedness	Low	Long-term	TxDOT, COA Public Works	COA Transportation Dept, TNR
108	Develop a roadway clearing plan, including which roadways to clear, how far to clear them, and who is responsible for clearing them. [TNR is currently developing a Winter Weather Response Plan]	Transportation	Planning and Preparedness	Low	Medium-term	COA Public Works, Austin Transportation	TxDOT, HSEM, TCOEM
109	Re-evaluate the list of priority roadways, sidewalks, fire hydrants, and critical infrastructure to be treated and cleared in winter weather planning. [TNR does not clear sidewalks]	Transportation	Planning and Preparedness	Medium	Short-term	COA Public Works	COA Transportation, TNR, TxDOT, Austin Water
110	Partner with the private sector to provide transportation alternatives that increase access to life-sustaining services, food, pharmacy, and health support.	Transportation	Planning and Preparedness	Medium	Medium-term	Fleet Mobility, Transportation	APH, TCHHS

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
111	Develop a transportation plan for vulnerable populations, such as people with access and functional needs and older adults, to access shelters during emergency response.	Transportation	Planning and Preparedness	Low	Medium-term	CapMetro, COA Transportation	APH, TCHHS, Austin Equity Office, COA Fleet Mobility Services, AFD, ATCEMS, Austin Resource Recovery (ARR), HSEM, TCOEM, Austin Code
112	Track and maintain an inventory of vehicle snow chains and other winter-storm ready response equipment, including maintenance and status of equipment. In addition, provide training to frontline personnel on the use and maintenance of this equipment.	Transportation	Training and Exercises	Medium	Medium-term	COA Fleet Mobility, TC Transportation and Natural Resources (TNR)	CapMetro, ATCEMS, AFD, APD
113	Strengthen and communicate ways the public can contribute to power and water conservation efforts during emergencies through public information campaigns, including the impact of personal usage of power and water when the systems are at risk of outages.	Leadership and Coordination	Communication and Coordination	Medium	Short-term	Austin Water, Austin Energy	HSEM PIO, NGOs
114	Identify the City and County departments that have oversight of the obligation of landlords and rights of tenants during a disaster or emergency. Task this agency with providing communication materials that explain these rights and obligations.	Water	Communication and Coordination	Medium	Short-term	Austin Code, AFD, HPD, COA Development Services Department	CPIO, HACA, County Tenant Organizations (independent of the county)

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115	Better prepare City of Austin communications staff to serve in positions responding to disasters. This should include developing or requiring training conducted by HSEM or FEMA.	Leadership and Coordination	Training and Exercises	Medium	Medium-term	HSEM, TCOEM	CPIO
116	Develop and implement a procedure that informs City and County departments of a boil water notice prior to public notification. For example, Travis County Sheriff's Office (TCSO) was not made aware of the boil water notice prior to public notification.	Water	Communication and Coordination	High	Short-term	Austin Water	HSEM, TCOEM, CPIO
117	Continue updating water meters to be digital water meters, allowing staff to better understand the system from one central location. In addition, Austin Water should identify cost-effective methods for monitoring system health and outages and sharing this information with the EOC.	Water	Equipment and Infrastructure	Low	Long-term	Austin Water	HSEM, TCOEM
118	Evaluate dispatch phone systems across the City to identify those in need of revision or upgrade to manage a large volume of requests during emergencies.	Leadership and Coordination	Equipment and Infrastructure	Medium	Short-term	CTM	Austin Energy, Austin Water
119	Identify and implement more sustainable methods of water distribution that reduce or eliminate reliance on single-use plastic. Include these and other sustainability considerations in the updated water distribution plan.	Water	Equipment and Infrastructure	Low	Long-term	HSEM, TCOEM	Office of Sustainability, Austin Water

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
120	Investigate with critical stakeholders the potential for adding resilient water infrastructure for hospitals and City and County facilities deemed critical and essential during emergencies. These investments should include installing backup systems, such as water connectors at hospitals and other large facilities, fully compatible with the equipment used by local emergency responders.	Water	Equipment and Infrastructure	Low	Long-term	Building Services, FMD, CATRAC	Local Hospitals
121	Identify operational facilities, such as logistics hubs, that can be used in various disaster-related operations with multiple distribution models. Equip these facilities with redundant and durable infrastructure, equipment, and trained personnel for response operations.	Water	Equipment and Infrastructure	Low	Long-term	Building Services, FMD, HSEM, TCOEM	Office of Sustainability, Resiliency Office
122	Provide departments with an emergency supply of potable water and food in the 72-120 hour response period to sustain essential services, and include actionable provisions in emergency planning documentation for the provision of potable water and food.	Water	Logistics and Supply Chain Management	Medium	Medium-term	HSEM, TCOEM	Office of Sustainability, APH
123	Conduct a comprehensive gap analysis of vendor contracts to identify and action stand-by contracts with vendors able to respond during a disaster with system-wide impacts. In addition, identify areas of strategic and operational overlap in plans, resource needs, and procedures	Water	Logistics and Supply Chain Management	Low	Long-term	Purchasing, HSEM, TCOEM	APH

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
	between Travis County and the City of Austin, specifically consolidating services to a single vendor when practical.						
124	In areas that cannot be covered or addressed by the EOC, identify alternative distribution strategies with vendors or organizations that include the necessary equipment and other capabilities to meet service delivery demands (e.g., forklifts and trained forklift operators).	Leadership and Coordination	Logistics and Supply Chain Management	Medium	Medium-term	HSEM, TCOEM	Austin Resource Recovery, COA Transportation, TNR
125	Where agencies, organizations, or community partners go above and beyond their traditional duties, establish methods to adequately commend individuals, departments, or organizations and recognize them for their service.	Water	Logistics and Supply Chain Management	Low	Long-term	CMO, Travis County Executives, City of Austin and Travis County Elected Officials	All City and County Departments
126	Establish real-time communication utilizing the GIS mapping system to ensure the location and operational status of water PODs is consistently integrated into the command and PIO sections at the EOC.	Leadership and Coordination	Logistics and Supply Chain Management	Medium	Short-term	HSEM, TCOEM, Austin Water	Austin Energy, NGOs, APH, TCHHS, Equity Office, Sustainability
127	Develop a system to maintain current contacts at utility companies that the EOC can utilize to assess and communicate operational functions in emergency responses.	Water	Logistics and Supply Chain Management	High	Immediate-term	Austin Water, TCOEM, Austin Energy	HSEM

Action ID	Recommendation	Focus Area	Capability	Ability to Implement	Target Completion	Lead Agency	Secondary Agency
128	Conduct a gap analysis to evaluate the ability of departments to access data specific to service disruptions or utility outages during a system-wide disaster.	Water	Logistics and Supply Chain Management	Low	Medium-term	Austin Water, Austin Energy, HSEM	NGOs, City and County Departments
129	Develop or revise the emergency water distribution plan to include more explicit and actionable considerations for older adults, people with access and functional needs, and those without access to transportation. Additionally, integrate as practical emergency water distribution planning with the mobile feeding plan.	Water	Planning and Preparedness	Low	Medium-term	HSEM, TCOEM, Austin Water	APH, TCHHS, Equity Office, Sustainability
130	Revise planning and location of POD operations to account for system-wide impacts, including large numbers of vehicles and pedestrians, and resources beyond water available, such as food.	Water	Planning and Preparedness	Medium	Medium-term	HSEM, TCOEM, Austin Water	APH, TCHHS, Equity Office, Sustainability, Transportation, APD, TCSO
131	Pre-establish a recovery governance structure that includes a designated full-time staffing lead with authority to convene and coordinate complex recovery needs related to disasters, such as a Chief Resiliency Officer. Align governance with FEMA's National Disaster Recovery Framework (NDRF) and Recovery Support Functions.	Leadership and Coordination	Planning and Preparedness	Low	Medium-term	Resiliency Office	HSEM, TCOEM, Central Texas VOAD,
132	Codify governance structure, ability to scale, alignment of tasks to varied recovery grants funding, and roles and responsibilities in an updated pre-disaster recovery plan.	Leadership and Coordination	Planning and Preparedness	Low	Long-term	Resiliency Office	HSEM, TCOEM

APPENDIX E: REFERENCE DOCUMENTS AND MATERIALS

Table 2: Reference Documents and Materials

Austin AAR Stakeholder Engagement List, Hagerty Consulting, September 2021

Austin EMS Association After-Action Report Winter Storm Survey, Austin EMS Association, February 2021

Austin EMS Association Winter Storm After-Action Report, Austin EMS Association, February 2021

Austin Energy February Storm Briefing: Event Overview and Communications, Austin Energy, March 2021

Austin Fire Department After-Action Report Winter Weather Storm, Austin Fire Department, February 2021

Austin Police Department Winter Weather Event After-Action Review, Austin Police Department, February 2021

Austin Watershed Protection Winter Storm After-Action Review, Austin Watershed Protection, February 2021

City Council Community Listening Sessions Winter Storm Review Task Force, City of Austin, 2021 ([Link](#))

City of Austin Organizational and Department Chart, City of Austin, June 2021 ([Link](#))

Food Access Hotwash Recommendations Table, Hagerty Consulting, May 2021

Food Access Hotwash, Hagerty Consulting, May 2021

Travis County Organizational Chart, Travis County, September 2016 ([Link](#))

Winter Storm Review Task Force Final Report, City of Austin, April 2021

Winter Storm/ Bottled Water Operations, Fleet Mobility Services, February 2021

APPENDIX F: AUSTIN COMMUNITY GROUP PARTICIPATION LIST

The following table is a non-exhaustive list of community groups, businesses, and organizations that participated in winter weather response activities. Those that also participated in the creation of this AAR are denoted with an asterisk.

Table 3: Stakeholder List

10K Fearless First Responders *	BRAVE Communities	HOPE Presbyterian	St. David's Foundation
Aging is Cool	Central Texas (Austin) Interfaith*	Huston Tillotson University	St. Edward's University
American Red Cross Central and South Texas Region*	Central Texas Allied Health Institute	Indivisible Austin	Street Forum
American Youth Works	Central Texas Foodbank *	Keep Austin Fed*	Sunrise Community Church DBA: Homeless Navigation Center*
Antonelli's	Central Texas VOAD*	Keep Austin Together*	Survive2Thrive Foundation
Any Baby Can	Communities in Schools	Keep Families Giving Foundation	Texas Appleseed
Apple *	Communities of Color United	Kendra Scott	Texas Children's Hospital
Asian Pacific American Public Works, Austin Texas Chapter	Community Advocacy & Healing	Lighter Loads	Texas Criminal Justice Coalition
Atlassian	Community Resilience Trust *	Lighthouse Kitchen	Texas Firewalkers
Austin Apartment Association	Cook's Nook *	Little Herds	Texas Gas Service
Austin Area Urban League *	Corporate Engagement Council	Lucian Morehead, Asterra Properties - Warehouse Space	Texas Grants Resource Center
Austin Disaster Relief Network*	DAWA Fund	LULAC	The Austin Common
Austin EMS Association	Del Valle Community Coalition*	Maximizing Hope	The Other Ones Foundation *
Austin Firefighters Association	Donovan Division	Meals on Wheels Central Texas*	Trimbuilt Construction
Austin Front Steps	Earth Day Austin	MEASURE	Uber
Austin Hotel & Lodging Association	ECHO	Memnosyne Institute	UFCU
Austin Justice Coalition	El Buen Samaritano*	Mobile Loaves and Fishes	United Nations SDSN Youth

Austin Mutual Aid *	Excellence & Advancement Foundation	Mosaic	United Professional Organizers
Austin Voices for Education and Youth*	FingerPulse Media, Inc.	NOVA Impact	United Way Central Texas
BASTA/Austin Needs Water*	GAVA (GO! Austin/VAMOS! Austin) *	P. Terry's	United Way for Greater Austin*
Baylor Scott and White Foundation	Gladiator Consulting	Portfolio Resident Services	UT MSSW Class of 2022
Baylor Scott and White Medical Center - Austin *	Good Work Austin*	Restaurant Depot	We Can Now
Beck Reit and Sons Construction	Hearts 2 Heal	Russ Hartman	Workers Defense Project
Big Wheelbarrow	H-E-B Grocery *	SAFE Alliance	World Central Kitchen
Black Women in Business	Homes Not Handcuffs	Sister Christina - Church Networks	

APPENDIX G: TASKFORCE VS. AAR RECOMMENDATIONS

The chart below lists select recommendations from the final report of the Winter Storm Review Task Force. The Task Force held a series listening sessions to document experiences, information, and recommendations. The column on the right lists the corresponding recommendation in the Winter Storm Uri AAR and IP.



TASKFORCE VS. AAR RECOMMENDATIONS



TASKFORCE VS. AAR RECOMMENDATIONS



The city should provide record keeping of medically vulnerable people in the city and county, to provide adequate emergency response.

Identify gaps in data sharing between City and County departments to assist emergency response operations. Utilize this data to target and support the communities and residents most in need.

The city needs to strengthen relationships and funding with nonprofits that can provide timely services in a disaster. Funding and/or reimbursement needs to be provided to organizations that supplement city services during an emergency.

Create an accessible list for approved emergency response purchases eligible for reimbursement and make this resource available to non-profits and community groups.

Develop clear guidance and communication for community-based and non-governmental organizations active in disaster response regarding cost recovery. Provide financial and cost recovery training or information by partnering with local and state Central Texas VOAD to educate all community-based organizations active in disaster response and recovery.

There needs to be a clearly documented and communicated plan for coordination among city, county, state and federal authorities for disaster preparedness and response, with a clarity of roles, authority, decision making and access to resources. This plan should be further coordinated with nonprofit and neighborhood groups, and volunteer citizen groups.

Include considerations for cascading impacts on supply chains in planning, preparedness, and operations. This should include utilization, collaboration and coordination of community groups and the private sector.

Enhance coordination between the City of Austin and non-governmental organizations, including relief site management transition and volunteer management.

Revise the Emergency Operation Plan (EOP) and other disaster planning documents with planning considerations for non-profits, the private sector, and other relevant community-based service delivery organizations.

APPENDIX H: LIST OF ACRONYMS

Table 4: List of Acronyms

Acronym	Definition
AAR	After-Action Report
ACC	Austin Convention Center
APD	Austin Police Department
ADRN	Austin Disaster Relief Network
AFD	Austin Fire Department
AISD	Austin Independent School District
APH	Austin Public Health
Red Cross	American Red Cross
CapMetro	Capital Metropolitan Transportation Authority
CATRAC	Capital Area of Texas Regional Advisory Council
COOP	Continuity of Operation Plan
COVID-19	Novel Coronavirus Disease 2019
DOC	Department Operations Center
EAT	Eating Apart Together
EMS	Austin-Travis County Emergency Medical Services
EOC	Austin-Travis County Emergency Operations Center
EOP	Emergency Operation Plan
ERCOT	Electric Reliability Council of Texas
FEMA	Federal Emergency Management Agency
FOUO	For Official Use Only
GIS	Geographic Information System
Hagerty	Hagerty Consulting, Inc.

Acronym	Definition
HSEM	City of Austin Homeland Security and Emergency Management
IC	Incident Commander
ICS	Incident Command Structure
IP	Improvement Plan
JIC	Joint Information Center
KPIs	Key Performance Indicators
MDC	Mobile Data Computer
MOC	Medical Operations Command
MOUs	Memorandums of Understanding
MRE	Meal-Ready-To-Eat
PARD	Austin Parks and Recreation Department
PIO	Public Information Officer
POD	Points of Distribution
SOP	Standard Operating Procedure
TCOEM	Travis County Office of Emergency Management
TCSO	Travis County Sheriff's Office
TDEM	Texas Division of Emergency Management
HHS	Travis County Health and Human Services
TxDOT	Texas Department of Transportation
VOAD	Voluntary Organizations Active in Disaster